

FUJI SEMICONDUCTORS



Supporting Society with
Energy and Environmental Technology



Fuji Electric Power Semiconductors contributing to Energy Management in various fields

Fuji Electric provides Power Semiconductors enabling high-efficiency energy usage in various fields such as industrial machinery, automobile, railroad, social infrastructure, renewable energy, consumer electronics and information equipment in order to achieve decarbonized society.

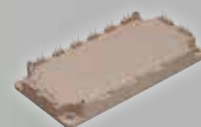
Fuji Electric contributes to realization of safe and secure sustainable society through continuous technology innovation and product development of Power Semiconductors as key devices in Power Electronics technology.



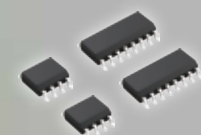
1 Power Devices (IGBT) ...P7



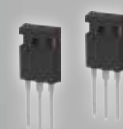
2 SiC Devices ...P67



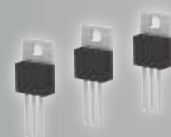
3 Power Supply Control ICs ...P77



4 Power MOSFETs ...P91



5 Rectifier Diodes ...P115



6 Pressure Sensors ...P131



INDEX

Outline ...P133

Order Quantity ...P156

Type Number Index ...P157

Maintenance products ...P162

Discontinued products ...P163

Information ...P166

The pictures on this page show examples of various applications which may use Fuji Electric Power Semiconductors, they aren't necessarily used in the products in these pictures.

1	Power Devices (IGBT)	7
	Features of IGBT Module X series	8
	Features of IGBT Module V series	8
	Products Map	10
	IGBT Module Small PIM < X series / V series >	14
	IGBT Module PIM < X series / V series >	17
	IGBT Module 6-Pack < X series / V series >	23
	IGBT Module 6-Pack < V series >	25
	IGBT Module 2-Pack < X series / V series >	27
	IGBT Module 1-Pack < V series / U series >	39
	IGBT Module Chopper < V series / U series >	41
	IGBT Module High Speed	44
	IGBT Module 3-level < V series >	45
	IGBT Module Small IPM < X series >	47
	IGBT Module IPM < X series / V series >	48
	Discrete IGBT	62
	IGBT Module for Electric Vehicle and Hybrid Electric Vehicle	66
2	SiC Devices	67
	IGBT Hybrid Modules with SiC-SBD	68
	All-SiC Modules	72
	SiC Schottky-Barrier Diodes (SBD)	73
3	Power Supply Control ICs	77
	Features of Power Supply Control ICs	78
	AC/DC Power Supply Control ICs	80
	Green mode PWM-ICs	80
	General PWM-ICs	82
	Green mode Quasi-resonant ICs	84
	Power factor correction ICs	86
	Current Resonant ICs	88
	High and Low side driver ICs	89
	DC/DC Power Supply Control ICs	90
4	Power MOSFETs	91
	MOSFET Super J MOS® S2 series	92
	Features of SuperFAP-E ³ , E ^{3S} series	94
	Features of SuperFAP-G series	94
	Super J MOS® S2 series	96
	Super J MOS® S2FD series (Built-in FRED type)	98
	SuperFAP-E ³ series	99
	SuperFAP-E ^{3S} Low Qg series	103
	SuperFAP-G series	105
	SuperFAP-G series (Built-in FRED type)	109
	Trench Power MOSFET	110
	Automotive Super J MOS® S2 series	111
	Automotive Super J MOS® S2FD series (Built-in FRED type)	112
	Automotive MOSFET (Trench Power MOS, SuperFAP-E ^{3S})	113
	Automotive SuperFAP-E ^{3S} Low Qg series (Built-in FRED type)	114
	Automotive IPS series (Intelligent Power Switches)	114

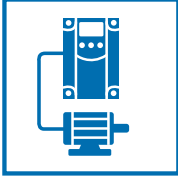
5 Rectifier Diodes	115
Features of SBD, LLD	116
Schottky Barrier Diodes (SBD)	118
Ultra Low IR Schottky Barrier Diodes	120
Low IR Schottky Barrier Diodes	121
Super LLD2 (For Critical conduction mode PFC)	124
Super LLD3 (For Continuous conduction mode PFC)	125
Low-Loss Fast Recovery Diodes (LLD)	126
Low-Loss Fast Soft Recovery Diodes (LLD)	128
Ultra Fast Recovery Diodes	129
Soft Recovery Fast Recovery Diode	130
6 Pressure Sensors	131
Pressure Sensors	132
7 Outline	133
Power devices	134
Power Supply Control ICs	148
Discrete devices	150
Order Quantity	156
Type Number Index	157
Maintenance products	162
Discontinued products	163
Information	166

Fuji Electric provides Power Semiconductors well suited for various applications. You will find more information on products for each application shown below at our Web site.



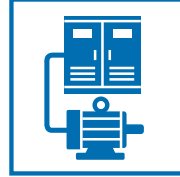
www.fujielectric.com/products/semiconductor/usage/

Inverters



Semiconductor products best suited for general-purpose inverters that carry out variable-speed operation of motors in products such as belt conveyors, fans and pumps

Medium-Voltage Inverters



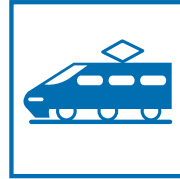
Semiconductor products suitable for medium-voltage inverters that drive 3-phase AC 3k/6k/6.6kV high-voltage motors used in iron and steel plants, textile plants and paper mills

NC / Servos



Semiconductor products best suited to NC and servos that carry out speed control and positioning of machine tools, as well as robots that have multi-spindle control features used in assembly, welding and conveyance

Railroads



Semiconductor products suited for the power electronics of railroad cars such as the main motor drive and auxiliary power supply equipment of rolling stock

Wind Power Generation



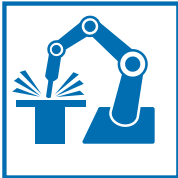
Semiconductor products suitable for AC/DC converters that convert the AC power output from wind turbine generators to DC power, as well as for inverters that convert DC power to the AC power of commercial frequencies

Solar



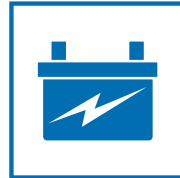
Semiconductor products best suited for power conditioners that convert solar-panel generated DC power into AC power to enable the residential consumption, as well as to facilitate the recovery of the power to the power systems of power companies

Welding Machines



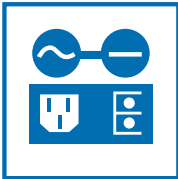
Semiconductor products suitable for switching circuits that generate resistance heat in welding machines to melt and integrate by adding heat or pressure to two or more metallic members

UPS



Semiconductor products ideal for the power conversion circuits of UPS (uninterruptible power supply) that prevent system shutdown during power outages and instantaneous power failures

Switching Power Supplies



Semiconductor products best suited for general-purpose switching power supplies used in a wide variety of applications such as equipment for general consumers and OA and communication devices

PC / Servers



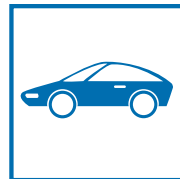
Semiconductor products suitable for the power supplies of increasingly high-performance desktop PCs and servers, as well as of increasingly compact and lightweight notebook PCs

Flat-screen TVs



Semiconductor products ideal for the power supplies of TV sets that require low power consumption and large screens that are increasingly thinner and more lightweight

Automobiles



IGBT modules, power ICs, MOSFETs and pressure sensors as semiconductor products for automobiles developed with the theme "Car Electronics Solutions - Contributing to the Environment, Safety and Comfort"

LED Lighting



The power supply for LED lighting requires a PFC circuit that complies with harmonic regulations and a converter circuit that is compatible with the LED and driver circuit being used

Air Conditioners



Semiconductor products that are ideal for the inverters that control the fan motors that regulate the airflow and the compressor motors that compress the refrigerant on air conditioners

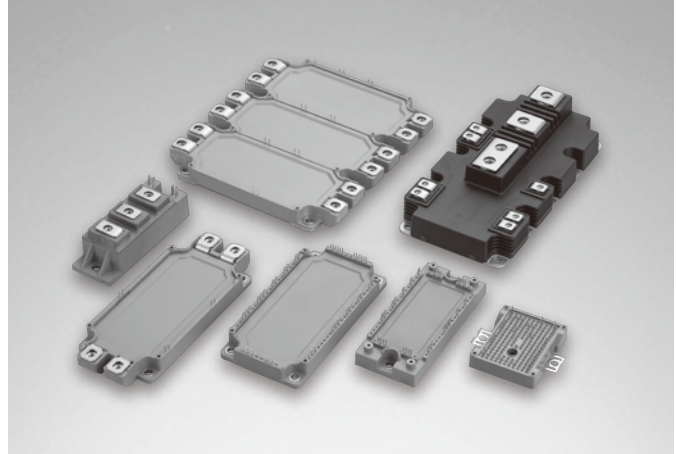
Power Devices (IGBT)

Features of IGBT Module X series	8
Features of IGBT Module V series	8
Products Map.....	10
IGBT Module Small PIM < X series / V series >	14
IGBT Module PIM < X series / V series >	17
IGBT Module 6-Pack < X series / V series >	23
IGBT Module 6-Pack < V series >	25
IGBT Module 2-Pack < X series / V series >	27
IGBT Module 1-Pack < V series / U series >	39
IGBT Module Chopper < V series / U series >	41
IGBT Module High Speed	44
IGBT Module 3-level < V series >	45
IGBT Module Small IPM < X series >	47
IGBT Module IPM < X series / V series >	48
Discrete IGBT	62
IGBT Module for Electric Vehicle and Hybrid Electric Vehicle.....	66

IGBT Module



Fuji Electric has been developing IGBT modules designed to be used as switching elements for power converters of variable-speed drives for motors, uninterruptible power supplies, and more. IGBT has superior characteristics combining the high-speed switching performance of a power MOSFET with the high-voltage/high-current handling capabilities of a bipolar transistor.



Features of IGBT Module X series

- **Contributes to energy savings by reducing power loss**

Reduces inverter loss by 10% and lower chip temperature by 11°C (Comparison with the 6th Generation V Series (1200V 75A), at $f_c = 8$ kHz)

- **Achieves equipment miniaturization**

Footprint size can be reduced by 36% by replacing the previous 6th Generation (1200V 75A) with the new 7th Generation X Series (1200V 75A) *1

*1 Mounting area ratio with 1200V PIM models

- **Contributes to improved equipment reliability**

Achieves guaranteed continuous operation at $T_{vj(op)} = 175^\circ\text{C}$

- **Increased rated current with RC-IGBT technology.**

Features of IGBT Module V series

- **A compact design allows for greater power output**

- High performance 6th-generation V series IGBT/FWD chipset
- $T_{vj(max.)} = 175^\circ\text{C}$, $T_{vj(op)} = 150^\circ\text{C}$

- **Environmentally friendly modules**

- Easy assemblage, solder free options
- RoHS compliant (Some parts are Non RoHS.)

- **Turn-on switching characteristics**

- Improved noise-loss trade-off
- Reduced turn-on dv/dt , and di_c/dt

- **Turn-off switching characteristic**

- Soft switching behavior, turn-off oscillation free

Product lineup

Number of IGBT Switches	Products Category	Page	Internal Configuration					Max V_{CE}					Rated Current					
			IGBT Module				Discrete IGBT	600V	650V	1200V	1700V	3300V	$\leq 50A$	$>50A$ $\leq 150A$	$>150A$ $\leq 300A$	$>300A$ $\leq 600A$	$>600A$ $\leq 1200A$	$>1200A$
			Standard Module	Power Integrated Module	Intelligent Power Module	3-level Module												
7	SmallIPIM	14,15,16		✓				✓	✓	✓			✓					
	PIM EconoPIM™	17,20		✓				✓	✓				✓	✓				
		18,19,21,22								✓			✓	✓				
6	6-pack	23,24						✓		✓			✓	✓	✓			
		25	✓								✓			✓				
		26								✓	✓				✓	✓		
2	Standard 2-pack	27						✓	✓					✓	✓	✓		
		28,29,31,32	✓							✓				✓	✓	✓	✓	
		30,33,34									✓			✓	✓	✓		
1	Standard 1-pack	39,40	✓							✓	✓				✓	✓	✓	
	Chopper	41,42,43	✓					✓		✓	✓		✓	✓	✓	✓	✓	✓
1,2	High Speed Module	44	✓							✓				✓	✓	✓		
	High Power Module	35,36	✓							✓	✓	✓				✓	✓	✓
	PrimePACK™	37,38,39	✓							✓	✓					✓	✓	✓
4,12	T/I-type NPC 3-level	45,46				✓		✓		✓	✓		✓	✓	✓	✓	✓	
6,7	IPM	47,48,50,52,55,59			✓			✓	✓	✓			✓	✓	✓	✓		
1	Discrete IGBT	62					✓	✓	✓	✓			✓	✓				
1	Discrete RB-IGBT	65					✓	✓						✓				
6	6-pack for EV/HEV	66	✓						✓(750V)							✓	✓	

Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.

Part numbers

6MBI100XBA120-50 (example)

6	MB	I	100	X	BA	120	50
Number of IGBT Switches	IGBT Module	Internal Configuration	Rated Current	IGBT Device Technology	Package Type	Max. V_{CE}	RoHS Compliant
		I: Standard Modules	×1 (A)	X: X series (7th Generation)	See the Products map	060: 600V	50 to 99 RoHS Compliant
		R: Power Integrated Modules	ex) 100:100A	XR: X series (7th Generation)		065: 650V	
		P: Intelligent Power Modules		V: V series (6th Generation)		120: 1200V	
				U: U series (5th Generation)		170: 1700V	
						330: 3300V	

Letter symbols

Letter symbols

V_{CES} : Collector-to-emitter rated voltage (Gate-to-emitter short-circuited)
 V_{GES} : Gate-to-emitter rated voltage (Collector-to-emitter short-circuited)
 I_C : Rated collector current
 P_{tot} : Maximum power dissipation
 $V_{CE(sat)}$: Collector-to-emitter saturation voltage
 V_{RRM} : Maximum repetitive reverse voltage
 I_O : Output current of converter
 V_{FM} : Maximum forward voltage drop of rectifier diode
 I_{FSM} : Maximum surge forward current of rectifier diode

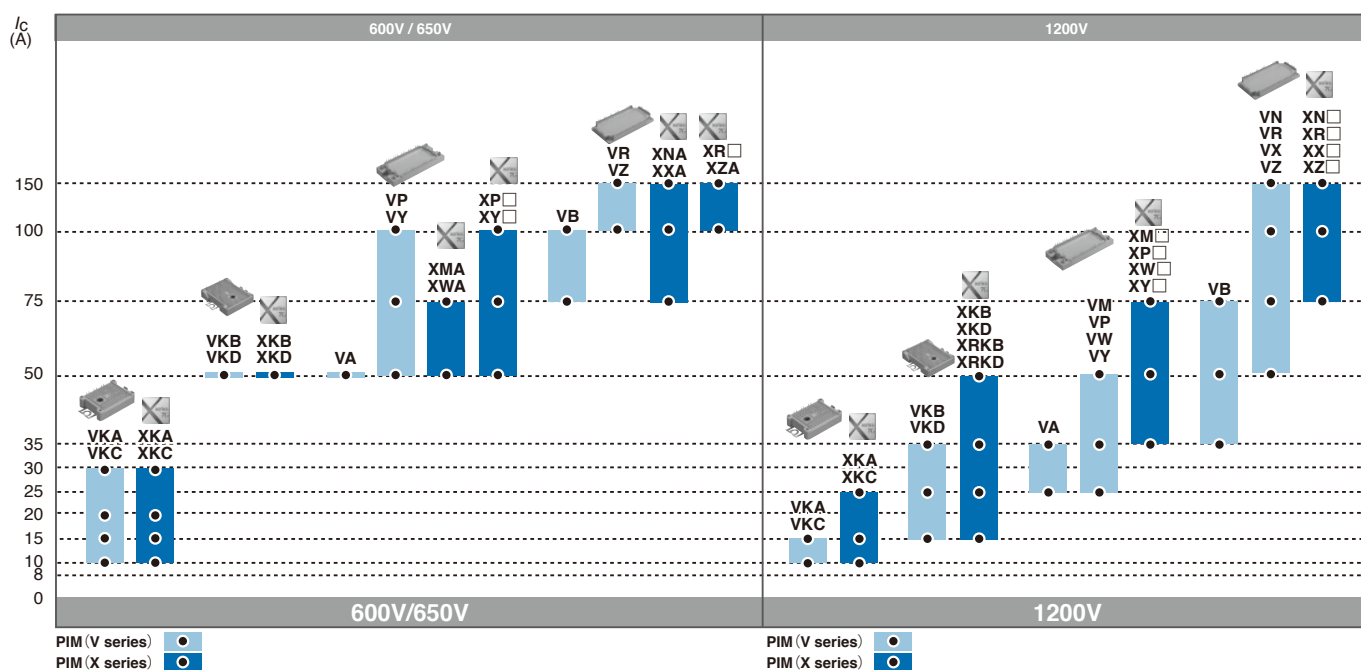
t_{on} : Turn-on time
 t_{off} : Turn-off time
 t_f : Fall time
 $t_{d(on)}$: Turn-on delay time
 $t_{d(off)}$: Turn-off delay time

Products Map

PIM (Power Integrated Module)

7MBR	Rated Current <i>I</i> _c	IGBT series & Package type						
		V series		X series				
		Solder pins	Press fit pins	Solder pins	Press fit pins	Size	Page	
		VKC	VKA	XKC	XKA	33.8×62.8mm	14,15,16	
		VKD	VKB	XKD, XRKD	XKB, XRKB	56.7×62.8mm	14,15,16	
		VA, VM, VP	VW, VY	XM□, XP□	XW□, XY□	45×107.5mm	17,18,19,20,21,22	
VB, VN, VR	VX, VZ	XN□, XR□	XX□, XZ□	62×122mm	17,18,19,20,21,22	EconoPIM™		

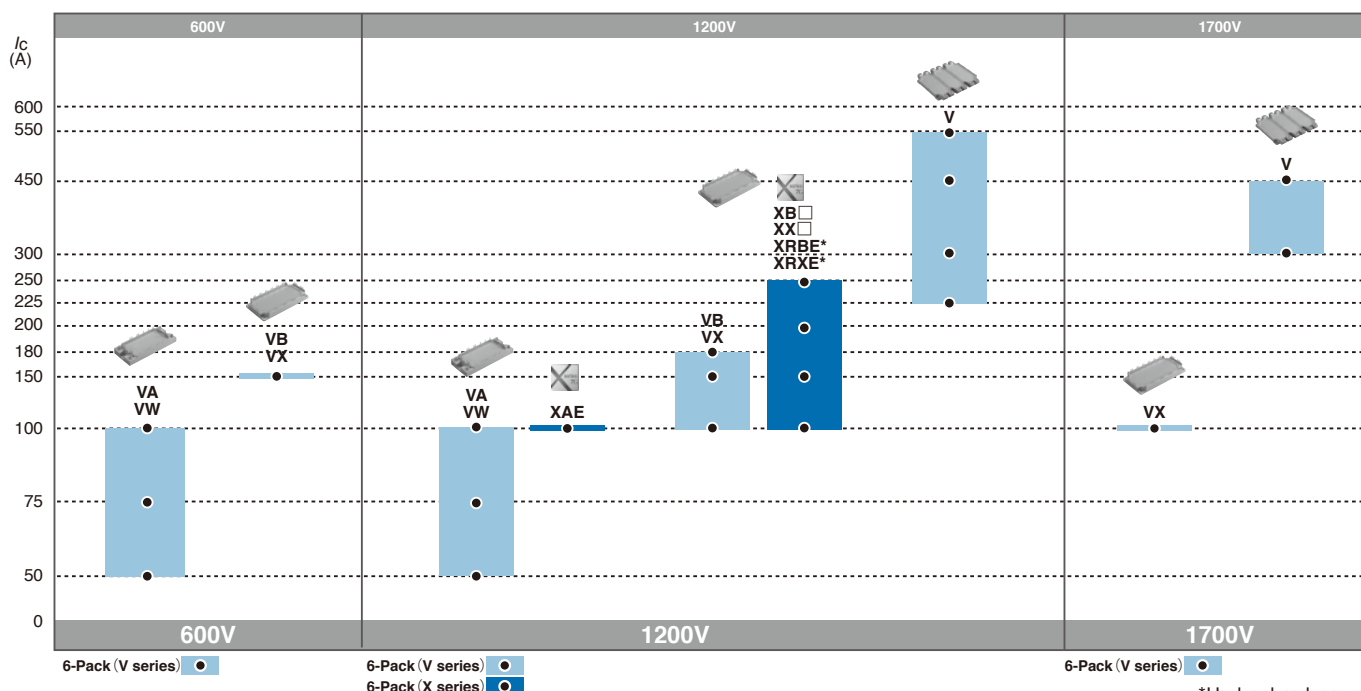
Note:EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.



6-Pack

6MBI	Rated Current <i>I</i> _c	IGBT series & Package type				Size	Page	
		V series		X series				
		Solder pins	Press fit pins	Solder pins	Press fit pins			
		VA	VW	XAE				
		VB	VX	XB□, XRBE	XX□, XRXE			
		V						
						45×107.5mm	23,24	EconoPACK™
						62×122mm	23,24,25	EconoPACK™
						150×162mm	26	EconoPACK™+

Note:EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.

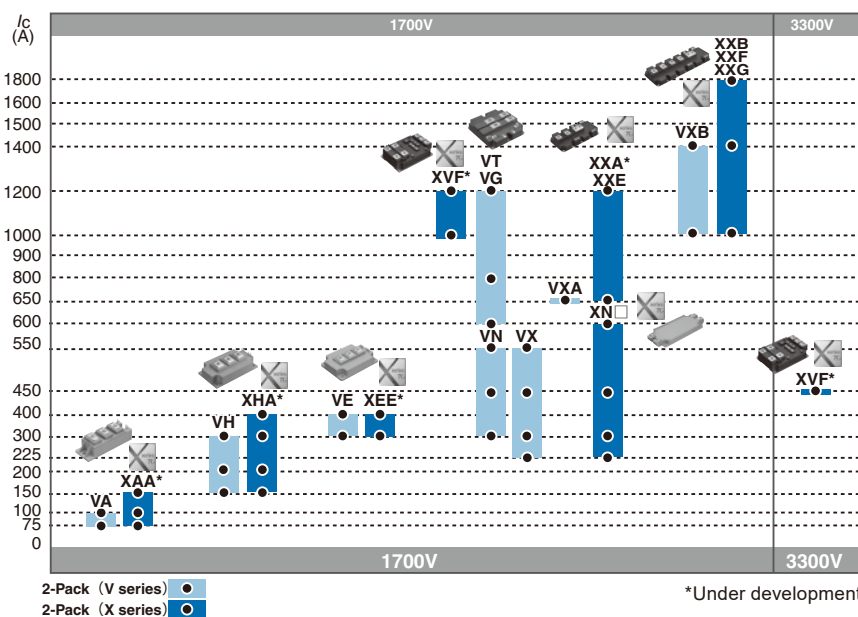
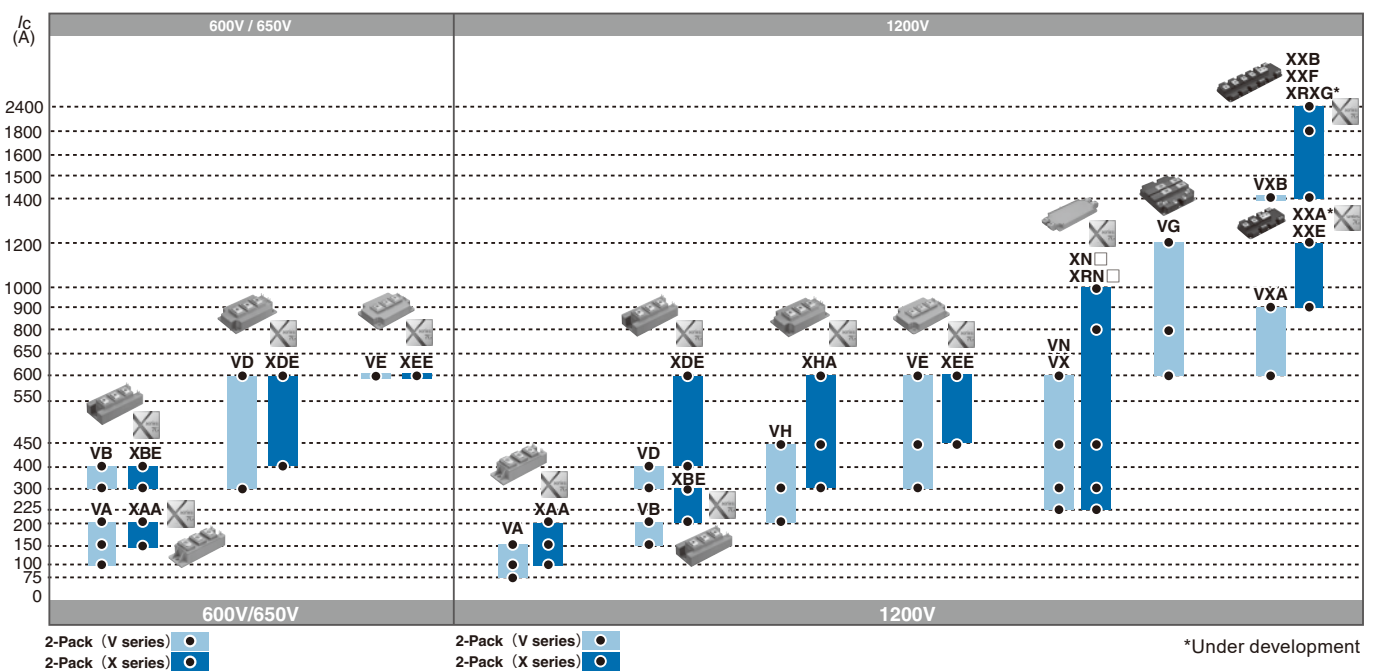


*Under development

2-Pack

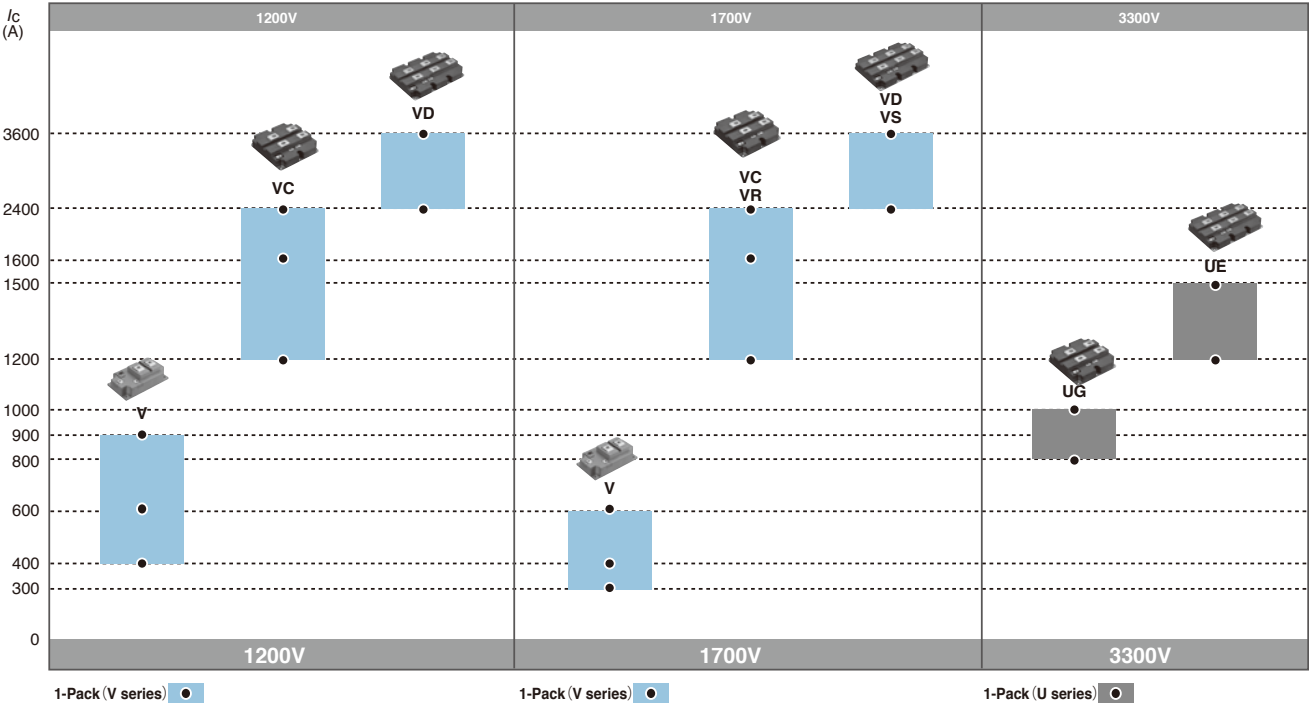
2MBI	Rated Current I_c	IGBT series & Package type		Size	Page	
		V series	X series			
		VA	XAA	34×94mm	27,28,29,30	Standard Pack
		VB	XBE	45×92mm	27,28,29	
		VD,VH	XDE,XHA	62×108mm	27,28,29,30	
		VE	XEE	80×110mm	27,28,29,30	
		VN, VX	XN□, XRN□	62×150mm	31,32,33,34	HPnC
		-	XVF	100×140mm	35	
		VG, VT	-	140×130mm	36	High Power Module
		VXA	XXA, XXE	89×172mm	37,38,39	PrimePACK™
		VXB	XXB, XXF, XXG, XRXG	89×250mm	37,38,39	

Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.



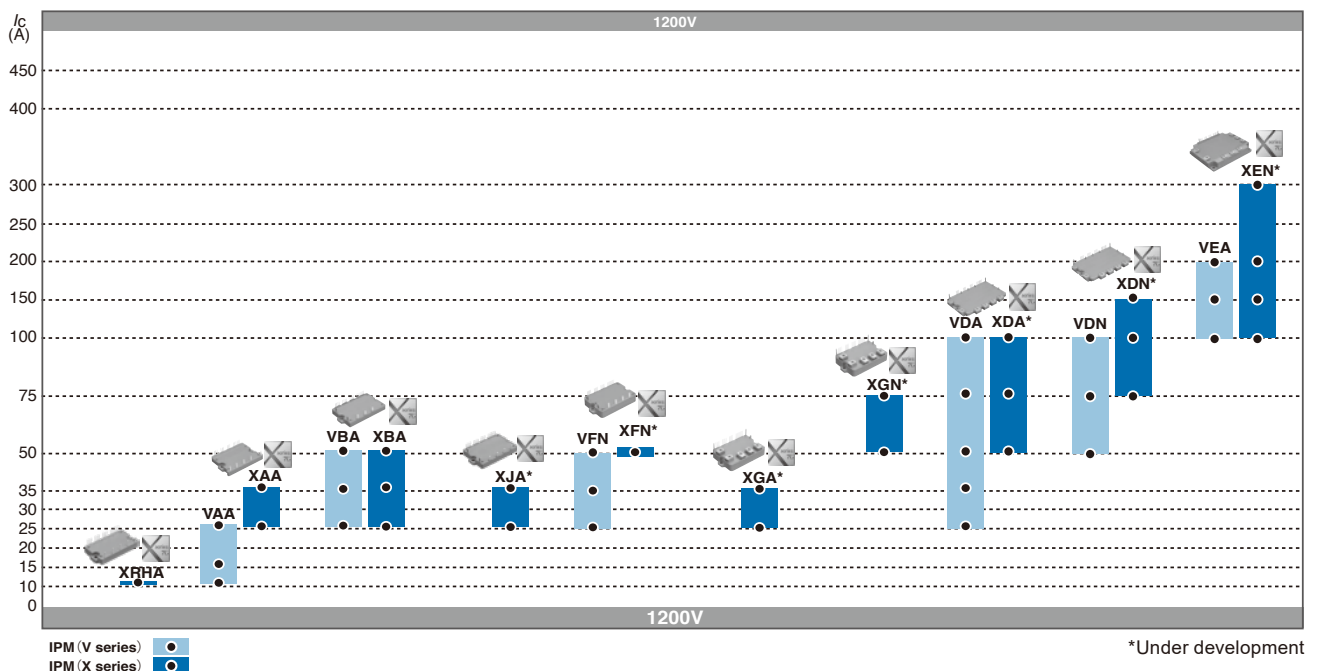
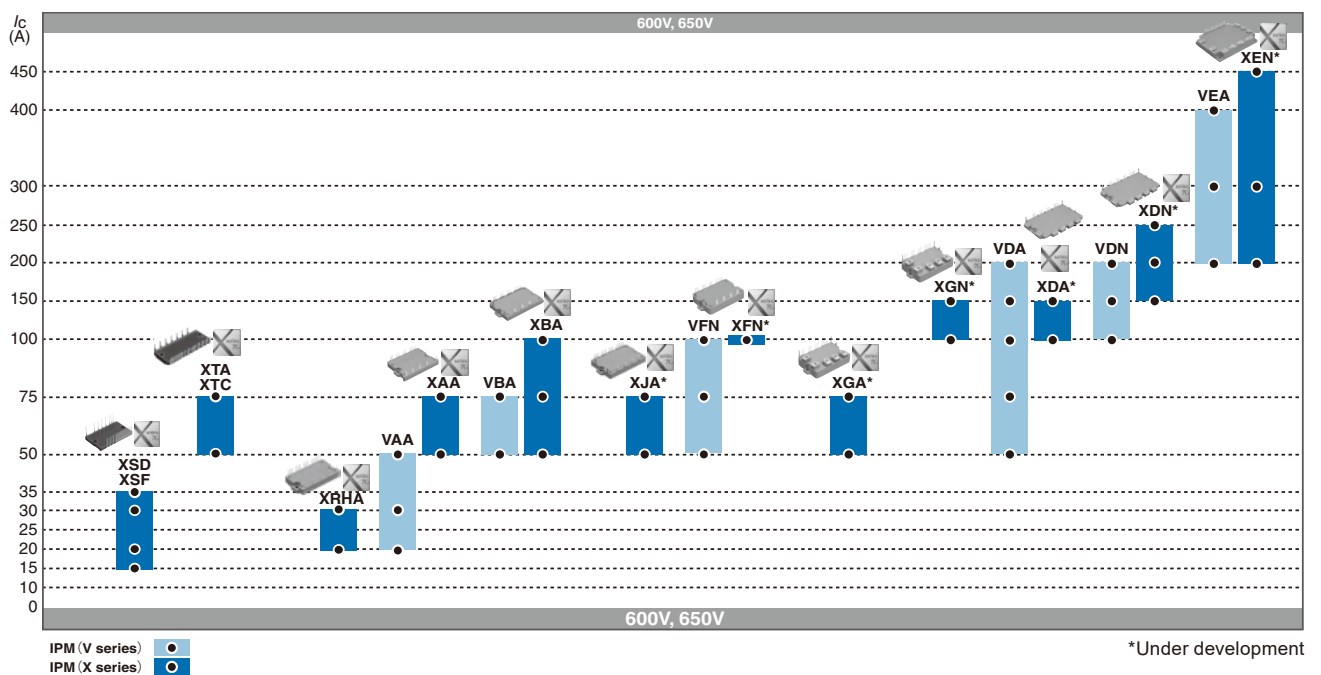
1-Pack

1MBI	Rated Current I_c	IGBT series & Package type	Size	Page	
		V/U series			
		V			Standard Pack
		VC, VR, UG			High Power Module
		VD, VS, UE	140×190mm	40	

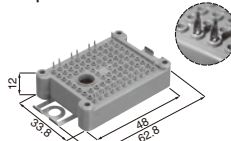
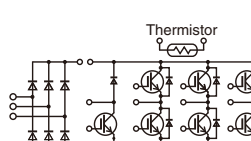
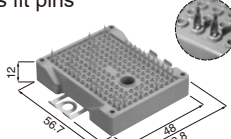
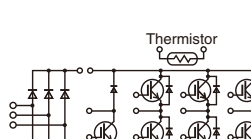
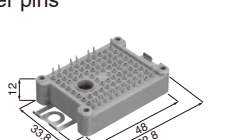
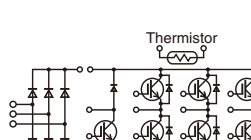
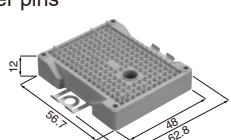
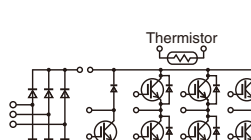


IPM (Intelligent Power Module)

6/7MBP	Rated Current I_c	IGBT series & Package type		Size	V series		X series		Page
		V series	X series		7 in 1	6 in 1	7 in 1	6 in 1	
			XSD, XSF	26×43mm	–	–	–	✓	47
			XTA, XTC	31×79mm	–	–	–	✓	47
			XRHA	36×70mm	–	–	–	✓	48
		VAA	XAA	49.5×70mm	–	✓	–	✓	48
		VBA	XBA	50.2×87mm	–	✓	–	✓	50
			XJA	50.2×87mm	–	–	✓	–	50
		VFN	XFN	55×90mm	✓	✓	✓	✓	52
			XGA, XGN	55×90mm	–	–	–	✓	52
		VDA, VDN	XDA, XDN	84×128.5mm	✓	✓	✓	✓	55
		VEA	XEN	110×142mm	✓	✓	✓	✓	59



■ Small PIM/Built-in converter and brake 600V, 650V class

Press fit pins  V:M726, X:M730 	<table> <tr> <th rowspan="2">I_c</th><th>650V</th><th>600V</th></tr> <tr> <th>X series</th><th>V series</th></tr> <tr> <td>10A</td><td>7MBR10XKA065-50</td><td>7MBR10VKA060-50</td></tr> <tr> <td>15A</td><td>7MBR15XKA065-50</td><td>7MBR15VKA060-50</td></tr> <tr> <td>20A</td><td>7MBR20XKA065-50</td><td>7MBR20VKA060-50</td></tr> <tr> <td>30A</td><td>7MBR30XKA065-50</td><td>7MBR30VKA060-50</td></tr> <tr> <td> </td><td> </td><td> </td></tr> <tr> <td>50A</td><td>7MBR50XKB065-50</td><td>7MBR50VKB060-50</td></tr> <tr> <td> </td><td> </td><td> </td></tr> <tr> <td> </td><td> </td><td> </td></tr> <tr> <td> </td><td> </td><td> </td></tr> </table>	I _c	650V	600V	X series	V series	10A	7MBR10XKA065-50	7MBR10VKA060-50	15A	7MBR15XKA065-50	7MBR15VKA060-50	20A	7MBR20XKA065-50	7MBR20VKA060-50	30A	7MBR30XKA065-50	7MBR30VKA060-50				50A	7MBR50XKB065-50	7MBR50VKB060-50										
I _c	650V		600V																															
	X series	V series																																
10A	7MBR10XKA065-50	7MBR10VKA060-50																																
15A	7MBR15XKA065-50	7MBR15VKA060-50																																
20A	7MBR20XKA065-50	7MBR20VKA060-50																																
30A	7MBR30XKA065-50	7MBR30VKA060-50																																
50A	7MBR50XKB065-50	7MBR50VKB060-50																																
Press fit pins  V:M727, X:M731 																																		
Solder pins  V:M728, X:M732 	<table> <tr> <td>10A</td><td>7MBR10XKC065-50</td><td>7MBR10VKC060-50</td></tr> <tr> <td>15A</td><td>7MBR15XKC065-50</td><td>7MBR15VKC060-50</td></tr> <tr> <td>20A</td><td>7MBR20XKC065-50</td><td>7MBR20VKC060-50</td></tr> <tr> <td>30A</td><td>7MBR30XKC065-50</td><td>7MBR30VKC060-50</td></tr> <tr> <td> </td><td> </td><td> </td></tr> <tr> <td>50A</td><td>7MBR50XKD065-50</td><td>7MBR50VKD060-50</td></tr> <tr> <td> </td><td> </td><td> </td></tr> <tr> <td> </td><td> </td><td> </td></tr> <tr> <td> </td><td> </td><td> </td></tr> </table>	10A	7MBR10XKC065-50	7MBR10VKC060-50	15A	7MBR15XKC065-50	7MBR15VKC060-50	20A	7MBR20XKC065-50	7MBR20VKC060-50	30A	7MBR30XKC065-50	7MBR30VKC060-50				50A	7MBR50XKD065-50	7MBR50VKD060-50															
10A	7MBR10XKC065-50	7MBR10VKC060-50																																
15A	7MBR15XKC065-50	7MBR15VKC060-50																																
20A	7MBR20XKC065-50	7MBR20VKC060-50																																
30A	7MBR30XKC065-50	7MBR30VKC060-50																																
50A	7MBR50XKD065-50	7MBR50VKD060-50																																
Solder pins  V:M729, X:M733 																																		

Dimension [mm]

■ X series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V _{CES}	I _C	P _{tot}	V _{CE(sat)}	V _{CES}	I _C	V _{R_{RM}}	V _{R_{RM}}	I _O	V _{FM}	I _{FSM}		
	Volts	Amps.	Watts	Volts	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.		
7MBR10XKA065-50	650	10	90	1.30	650	10	650	800	10	0.90	340	M730	25
7MBR15XKA065-50	650	15	110	1.30	650	15	650	800	15	0.95	340	M730	25
7MBR20XKA065-50	650	20	135	1.30	650	20	650	800	20	1.00	340	M730	25
7MBR30XKA065-50	650	30	180	1.30	650	30	650	800	30	1.05	340	M730	25
7MBR50XKB065-50	650	50	270	1.30	650	50	650	800	50	1.10	470	M731	45
7MBR10XKC065-50	650	10	90	1.30	650	10	650	800	10	0.90	340	M732	25
7MBR15XKC065-50	650	15	110	1.30	650	15	650	800	15	0.95	340	M732	25
7MBR20XKC065-50	650	20	135	1.30	650	20	650	800	20	1.00	340	M732	25
7MBR30XKC065-50	650	30	180	1.30	650	30	650	800	30	1.05	340	M732	25
7MBR50XKD065-50	650	50	270	1.30	650	50	650	800	50	1.10	470	M733	45

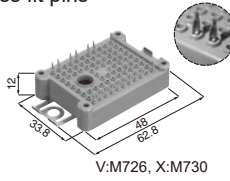
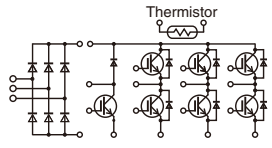
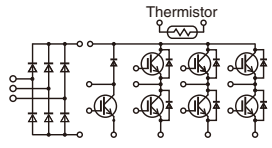
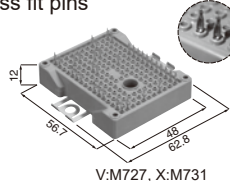
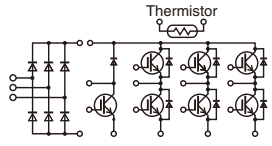
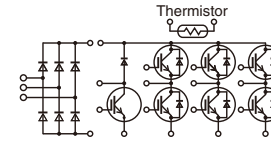
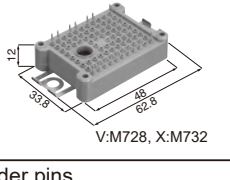
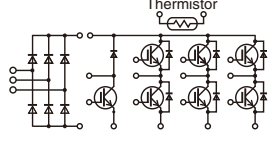
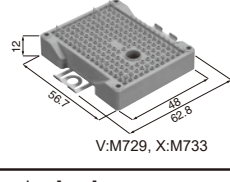
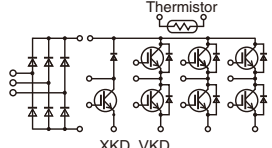
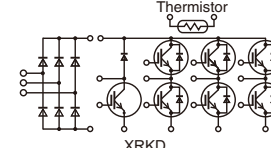
■ V series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V _{CES}	I _C Cont.	P _{tot}	V _{CE(sat)} typ.	V _{CES}	I _C Cont.	V _{R_{RM}}	V _{R_{RM}}	I _O Cont.	V _{FM} typ.	I _{FSM}		
	Volts	Amps.	Watts	Volts	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.	Grams	
7MBR10VKA060-50	600	10	70	1.70	600	10	600	800	10	0.95	360	M726	25
7MBR15VKA060-50	600	15	85	1.75	600	15	600	800	15	1.00	360	M726	25
7MBR20VKA060-50	600	20	100	1.70	600	20	600	800	20	1.05	360	M726	25
7MBR30VKA060-50	600	30	125	1.70	600	30	600	800	30	1.15	360	M726	25
7MBR50VKB060-50	600	50	180	1.60	600	50	600	800	50	1.00	580	M727	45
7MBR10VKC060-50	600	10	70	1.70	600	10	600	800	10	0.95	360	M728	25
7MBR15VKC060-50	600	15	85	1.75	600	15	600	800	15	1.00	360	M728	25
7MBR20VKC060-50	600	20	100	1.70	600	20	600	800	20	1.05	360	M728	25
7MBR30VKC060-50	600	30	125	1.70	600	30	600	800	30	1.15	360	M728	25
7MBR50VKD060-50	600	50	180	1.60	600	50	600	800	50	1.00	580	M729	45

 $V_{CE(sat)}, V_{FM}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module PIM < X series / V series >

Small PIM/Built-in converter and brake 1200V class

Press fit pins	 V:M726, X:M730			I_C	1200V	
					X series	V series
				10A	7MBR10XKA120-50	7MBR10VKA120-50
				15A	7MBR15XKA120-50	7MBR15VKA120-50
				25A	7MBR25XKA120-50	
Press fit pins	 V:M727, X:M731			15A	7MBR15XKB120-50	7MBR15VKB120-50
				25A	7MBR25XKB120-50	7MBR25VKB120-50
				35A	7MBR35XKB120-50	7MBR35VKB120-50
				50A	7MBR50XRKB120-50	
Solder pins	 V:M728, X:M732			10A	7MBR10XKC120-50	7MBR10VKC120-50
				15A	7MBR15XKC120-50	7MBR15VKC120-50
				25A	7MBR25XKC120-50	
Solder pins	 V:M729, X:M733			15A	7MBR15XKD120-50	7MBR15VKD120-50
				25A	7MBR25XKD120-50	7MBR25VKD120-50
				35A	7MBR35XKD120-50	7MBR35VKD120-50
				50A	7MBR50XRKD120-50	

Dimension [mm]

■ X series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V_{CES}	I_C	P_{tot}	$V_{CE(sat)}$	V_{CES}	I_C	V_{RRM}	V_{RRM}	I_O	V_{FM}	I_{FSM}		
	Volts	Cont. Amps.	Watts	typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	typ. Volts	Amps.		
7MBR10XKA120-50	1200	10	105	1.50	1200	10	1200	1600	10	0.95	300	M730	25
7MBR15XKA120-50	1200	15	135	1.50	1200	15	1200	1600	15	1.00	300	M730	25
7MBR25XKA120-50	1200	25	155	1.70	1200	25	1200	1600	25	1.05	300	M730	25
7MBR15XKB120-50	1200	15	135	1.50	1200	15	1200	1600	15	0.95	385	M731	45
7MBR25XKB120-50	1200	25	195	1.50	1200	25	1200	1600	25	1.00	385	M731	45
7MBR35XKB120-50	1200	35	255	1.50	1200	35	1200	1600	35	1.05	385	M731	45
7MBR50XRKB120-50	1200	50	500	1.80	1200	35	1200	1600	50	1.10	385	M731	45
7MBR10XKC120-50	1200	10	105	1.50	1200	10	1200	1600	10	0.95	300	M732	25
7MBR15XKC120-50	1200	15	135	1.50	1200	15	1200	1600	15	1.00	300	M732	25
7MBR25XKC120-50	1200	25	155	1.70	1200	25	1200	1600	25	1.05	300	M732	25
7MBR15XKD120-50	1200	15	135	1.50	1200	15	1200	1600	15	0.95	385	M733	45
7MBR25XKD120-50	1200	25	195	1.50	1200	25	1200	1600	25	1.00	385	M733	45
7MBR35XKD120-50	1200	35	255	1.50	1200	35	1200	1600	35	1.05	385	M733	45
7MBR50XRKD120-50	1200	50	500	1.80	1200	35	1200	1600	50	1.10	385	M733	45

 $V_{CE(sat)}$, V_{FM} : at $T_{vj}=25^{\circ}\text{C}$, Chip

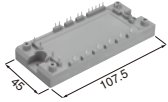
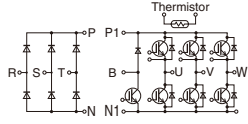
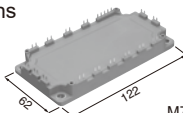
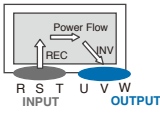
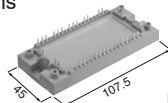
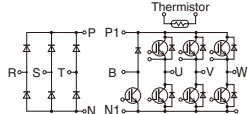
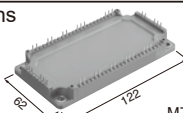
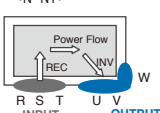
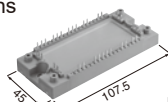
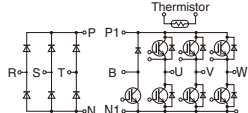
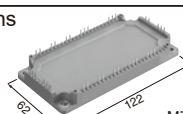
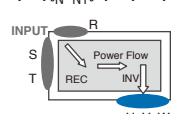
■ V series

	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V_{CES}	I_C	P_{tot}	$V_{CE(sat)}$	V_{CES}	I_C	V_{RRM}	V_{RRM}	I_O	V_{FM}	I_{FSM}		
	Volts	Cont. Amps.	Watts	typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	typ. Volts	Amps.		Grams
7MBR10VKA120-50	1200	10	110	1.85	1200	10	1200	1600	10	0.95	245	M726	25
7MBR15VKA120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M726	25
7MBR15VKB120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M727	45
7MBR25VKB120-50	1200	25	180	1.85	1200	25	1200	1600	25	1.00	370	M727	45
7MBR35VKB120-50	1200	35	215	1.85	1200	35	1200	1600	35	1.05	370	M727	45
7MBR10VKC120-50	1200	10	110	1.85	1200	10	1200	1600	10	0.95	245	M728	25
7MBR15VKC120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M728	25
7MBR15VKD120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M729	45
7MBR25VKD120-50	1200	25	180	1.85	1200	25	1200	1600	25	1.00	370	M729	45
7MBR35VKD120-50	1200	35	215	1.85	1200	35	1200	1600	35	1.05	370	M729	45

$V_{CE(sat)}$, V_{FM} : at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module PIM < X series / V series >

PIM/Built-in converter and brake EconoPIM™ 600V, 650V class

Solder pins			I_c	650V X series	600V V series
 M711			50A		7MBR50VA060-50
 M712			75A 100A		7MBR75VB060-50 7MBR100VB060-50
 M719			50A 75A	7MBR50XMA065-50 7MBR75XMA065-50	
 M720			75A 100A 150A	7MBR75XNA065-50 7MBR100XNA065-50 7MBR150XNA065-50	
 M719			50A 75A 100A	7MBR50XPA065-50 7MBR75XPA065-50 7MBR100XPE065-50	7MBR50VP060-50 7MBR75VP060-50 7MBR100VP060-50
 M720			100A 150A	7MBR100XRA065-50 7MBR150XRA065-50 7MBR150XRE065-50	7MBR100VR060-50 7MBR150VR060-50

Dimension [mm]

X series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass Grams
	V_{CES}	I_c	P_{tot}	$V_{CE(sat)}$	V_{CES}	I_c	V_{RRM}	V_{RRM}	I_o	V_{FM}	I_{FSM}		
	Volts	Cont. Amps.	Watts	typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	typ. Volts	Amps.		
7MBR50XMA065-50	650	50	210	1.3	650	30	650	800	50	1.05	505	M719	200
7MBR75XMA065-50	650	75	270	1.3	650	50	650	800	75	1.15	505	M719	200
7MBR75XNA065-50	650	75	270	1.3	650	50	650	800	75	1.15	505	M720	310
7MBR100XNA065-50	650	100	330	1.3	650	50	650	800	100	1.1	745	M720	310
7MBR150XNA065-50	650	150	450	1.3	650	75	650	800	150	1.1	1260	M720	310
7MBR50XPA065-50	650	50	210	1.3	650	30	650	800	50	1.05	505	M719	200
7MBR75XPA065-50	650	75	270	1.3	650	50	650	800	75	1.15	505	M719	200
7MBR100XPE065-50	650	100	480	1.3	650	50	650	800	100	1.1	745	M719	200
7MBR100XRA065-50	650	100	330	1.3	650	50	650	800	100	1.1	745	M720	310
7MBR150XRA065-50	650	150	450	1.3	650	75	650	800	150	1.1	1260	M720	310
7MBR150XRE065-50	650	150	700	1.3	650	75	650	800	150	1.1	1260	M720	310

V series

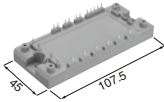
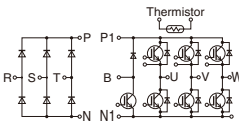
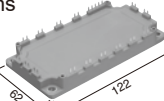
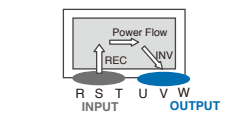
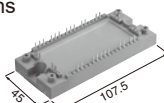
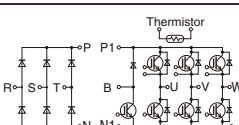
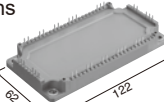
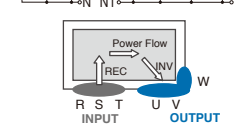
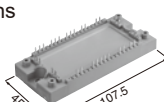
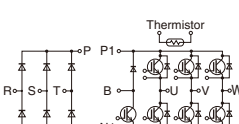
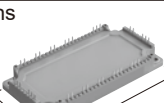
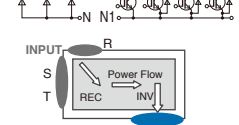
Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass Grams
	V_{CES}	I_c	P_{tot}	$V_{CE(sat)}$	V_{CES}	I_c	V_{RRM}	V_{RRM}	I_o	V_{FM}	I_{FSM}		
	Volts	Cont. Amps.	Watts	typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	typ. Volts	Amps.		
7MBR50VA060-50	600	50	200	1.6	600	50	600	800	50	1.3	210	M711	180
7MBR75VB060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M712	300
7MBR100VB060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M712	300
7MBR50VP060-50	600	50	200	1.6	600	50	600	800	50	1.3	210	M719	200
7MBR75VP060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M719	200
7MBR100VP060-50	600	100	430	1.85	600	50	600	800	100	1.25	700	M719	200
7MBR100VR060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M720	310
7MBR150VR060-50	600	150	485	1.6	600	75	600	800	150	1.25	960	M720	310

Note: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.

 $V_{CE(sat)}$, V_{FM} : at $T_{vj}=25^\circ\text{C}$, Chip

IGBT Module PIM < X series / V series >

PIM/Built-in converter and brake EconoPIM™ 1200V class

Solder pins		I _c	1200V	
			X series	V series
 M711		25A		7MBR25VA120-50
		35A		7MBR35VA120-50
 M712		35A		7MBR35VB120-50
		50A		7MBR50VB120-50
		75A		7MBR75VB120-50
 M719		25A		7MBR25VM120-50
		35A	7MBR35XMA120-50	7MBR35VM120-50
		50A	7MBR50XMA120-50	7MBR50VM120-50
		75A	7MBR75XME120-50	
 M720		50A		7MBR50VN120-50
		75A	7MBR75XNA120-50	7MBR75VN120-50
		100A	7MBR100XNA120-50	7MBR100VN120-50
		150A	7MBR150XNE120-50	7MBR150VN120-50
 M719		25A		7MBR25VP120-50
		35A	7MBR35XPA120-50	7MBR35VP120-50
		50A	7MBR50XPA120-50	7MBR50VP120-50
		75A	7MBR75XPE120-50	
 M720		50A		7MBR50VR120-50
		75A	7MBR75XRA120-50	7MBR75VR120-50
		100A	7MBR100XRE120-50	7MBR100VR120-50
		150A	7MBR150XRE120-50	7MBR150VR120-50

Dimension [mm]

X series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V _{CES}	I _c	P _{tot}	V _{CE(sat)}	V _{CES}	I _c	V _{RRM}	V _{RRM}	I _o	V _{FM}	I _{FSM}		
	Volts	Amps.	Watts	Volts	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.		Grams
7MBR35XMA120-50	1200	35	200	1.5	1200	25	1200	1600	35	1.05	385	M719	200
7MBR50XMA120-50	1200	50	250	1.5	1200	35	1200	1600	50	1.05	520	M719	200
7MBR75XME120-50	1200	75	455	1.55	1200	35	1200	1600	75	1.15	520	M719	200
7MBR75XNA120-50	1200	75	335	1.5	1200	50	1200	1600	75	1.15	520	M720	310
7MBR100XNA120-50	1200	100	445	1.45	1200	75	1200	1600	100	1.05	775	M720	310
7MBR150XNE120-50	1200	150	880	1.5	1200	75	1200	1600	150	1.05	1400	M720	310
7MBR35XPA120-50	1200	35	200	1.5	1200	25	1200	1600	35	1.05	385	M719	200
7MBR50XPA120-50	1200	50	250	1.5	1200	35	1200	1600	50	1.05	520	M719	200
7MBR50XPE120-50	1200	50	340	1.5	1200	35	1200	1600	50	1.05	520	M719	200
7MBR75XPE120-50	1200	75	455	1.55	1200	35	1200	1600	75	1.15	520	M719	200
7MBR75XRA120-50	1200	75	335	1.5	1200	50	1200	1600	75	1.15	520	M720	310
7MBR75XRE120-50	1200	75	480	1.5	1200	50	1200	1600	75	1.0	775	M720	310
7MBR100XRA120-50	1200	100	445	1.45	1200	75	1200	1600	100	1.05	775	M720	310
7MBR100XRE120-50	1200	100	685	1.45	1200	75	1200	1600	100	1.05	775	M720	310
7MBR150XRE120-50	1200	150	880	1.5	1200	75	1200	1600	150	1.05	1400	M720	310

Note: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.

V_{CE(sat)}, V_{FM}: at T_{vj}=25°C, Chip

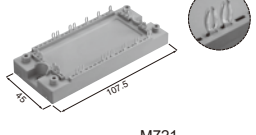
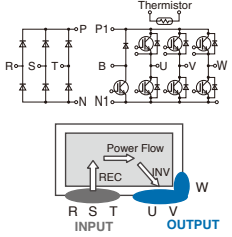
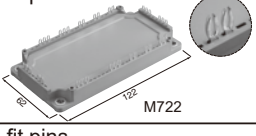
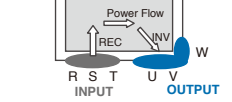
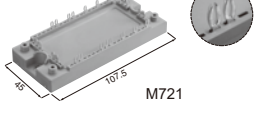
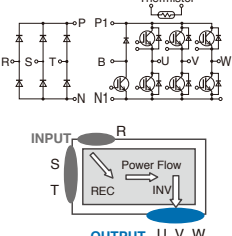
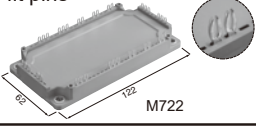
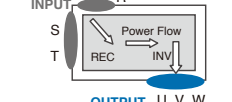
■ V series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass Grams
	V_{CES}	I_C	P_{tot}	$V_{CE(sat)}$	V_{CES}	I_C	V_{RRM}	V_{RRM}	I_O	V_{FM}	I_{FSM}		
	Volts	Amps.	Watts	Volts	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.		
7MBR25VA120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.42	155	M711	180
7MBR35VA120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M711	180
7MBR35VB120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M712	300
7MBR50VB120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M712	300
7MBR75VB120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M712	300
7MBR25VM120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M719	200
7MBR35VM120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M719	200
7MBR50VM120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M719	200
7MBR50VN120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M720	310
7MBR75VN120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M720	310
7MBR100VN120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M720	310
7MBR150VN120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M720	310
7MBR25VP120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M719	200
7MBR35VP120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M719	200
7MBR50VP120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M719	200
7MBR50VR120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M720	310
7MBR75VR120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M720	310
7MBR100VR120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M720	310
7MBR150VR120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M720	310

 $V_{CE(sat)}$, V_{FM} : at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module PIM < X series / V series >

PIM/Built-in converter and brake EconoPIM™ 600V, 650V class

Press fit pins		I _C	650V	600V
			X series	V series
 M721		50A	7MBR50XWA065-50	
		75A	7MBR75XWA065-50	
 M722		75A	7MBR75XXA065-50	
		100A	7MBR100XXA065-50	
		150A	7MBR150XXA065-50	
 M721		50A	7MBR50XYA065-50	7MBR50VY060-50
		75A	7MBR75XYA065-50	7MBR75VY060-50
		100A	7MBR100XE065-50	7MBR100VY060-50
 M722		100A	7MBR100XZA065-50	7MBR100VZ060-50
				7MBR100VZ060-80
		150A	7MBR150XZA065-50	7MBR150VZ060-50
				7MBR150VZ060-80

Dimension [mm]

X series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V _{CES}	I _C	P _{tot}	V _{CE(sat)}	V _{CES}	I _C	V _{RRM}	V _{RRM}	I _O	V _{FM}	I _{FSM}		
	Volts	Amps.	Watts	Volts	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.		Grams
7MBR50XWA065-50	650	50	210	1.3	650	30	650	800	50	1.05	505	M721	200
7MBR75XWA065-50	650	75	270	1.3	650	50	650	800	75	1.15	505	M721	200
7MBR75XXA065-50	650	75	270	1.3	650	50	650	800	75	1.15	505	M722	310
7MBR100XXA065-50	650	100	330	1.3	650	50	650	800	100	1.1	745	M722	310
7MBR150XXA065-50	650	150	450	1.3	650	75	650	800	150	1.1	1260	M722	310
7MBR50XYA065-50	650	50	210	1.3	650	30	650	800	50	1.05	505	M721	200
7MBR75XYA065-50	650	75	270	1.3	650	50	650	800	75	1.15	505	M721	200
7MBR100XE065-50	650	100	480	1.3	650	50	650	800	100	1.1	745	M721	200
7MBR100XZA065-50	650	100	330	1.3	650	50	650	800	100	1.1	745	M722	310
7MBR150XZA065-50	650	150	450	1.3	650	75	650	800	150	1.1	1260	M722	310

V series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V _{CES}	I _C	P _{tot}	V _{CE(sat)}	V _{CES}	I _C	V _{RRM}	V _{RRM}	I _O	V _{FM}	I _{FSM}		
	Volts	Amps.	Watts	Volts	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.		Grams
7MBR50VY060-50	600	50	215	1.6	600	50	600	800	50	1.3	210	M721	200
7MBR75VY060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M721	200
7MBR100VY060-50	600	100	430	1.85	600	50	600	800	100	1.25	700	M721	200
7MBR100VZ060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M722	310
7MBR100VZ060-80	600	100	335	1.6	600	50	600	800	100	1.25	700	M722	310
7MBR150VZ060-50	600	150	485	1.6	600	75	600	800	150	1.25	960	M722	310
7MBR150VZ060-80	600	150	485	1.6	600	75	600	800	150	1.25	960	M722	310

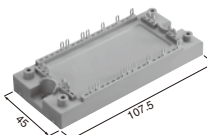
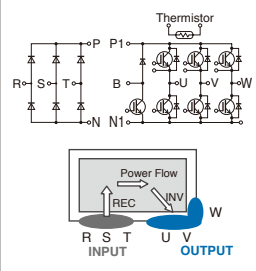
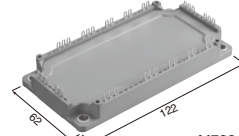
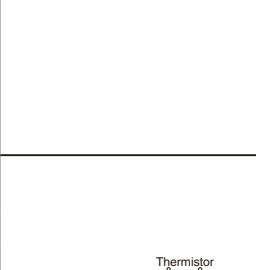
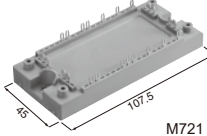
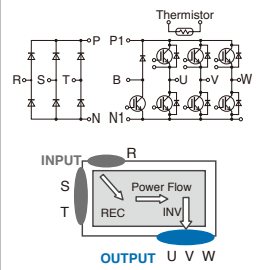
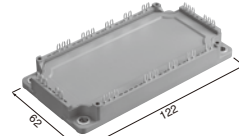
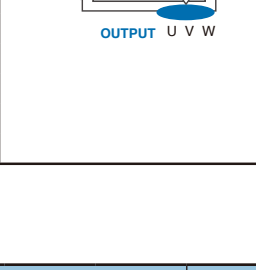
Note1: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.

Note2: "-80" : Pre-Applied Thermal-Interface-Material

V_{CE(sat)}, V_{FM}: at T_{vj}=25°C, Chip

IGBT Module PIM < X series / V series >

PIM/Built-in converter and brake EconoPIM™ 1200V class

Press fit pins		I_c	1200V	
			X series	V series
 M721		25A		7MBR25VW120-50
		35A	7MBR35XWA120-50	7MBR35VW120-50
		50A	7MBR50XWA120-50	7MBR50VW120-50
		75A	7MBR75XWE120-50	
		50A		7MBR50VX120-50
 M722				7MBR50VX120-80
		75A	7MBR75XXA120-50	7MBR75VX120-50
				7MBR75VX120-80
		100A	7MBR100XXA120-50	7MBR100VX120-50
				7MBR100VX120-80
 M721		150A	7MBR150XXE120-50	7MBR150VX120-50
				7MBR150VX120-80
		25A		7MBR25VY120-50
		35A	7MBR35XYA120-50	7MBR35VY120-50
		50A	7MBR50XYA120-50	7MBR50VY120-50
 M722		75A	7MBR75XE120-50	
		50A		7MBR50VZ120-50
				7MBR50VZ120-80
		75A	7MBR75XZA120-50	7MBR75VZ120-50
				7MBR75VZ120-80
		100A	7MBR100XZA120-50	7MBR100VZ120-50
				7MBR100VZ120-80
		150A	7MBR150XZE120-50	7MBR150VZ120-50
				7MBR150VZ120-80

Dimension [mm]

X series

Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass
	V_{CES}	I_c	P_{tot}	$V_{CE(sat)}$	V_{CES}	I_c	V_{RRM}	V_{RRM}	I_o	V_{FM}	I_{FSM}		
	Volts	Cont. Amps.	Watts	typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	typ. Volts	Amps.		Grams
7MBR35XWA120-50	1200	35	200	1.5	1200	25	1200	1600	35	1.05	385	M721	200
7MBR50XWA120-50	1200	50	250	1.5	1200	35	1200	1600	50	1.05	520	M721	200
7MBR75XWE120-50	1200	75	455	1.55	1200	35	1200	1600	75	1.15	520	M721	200
7MBR75XXA120-50	1200	75	335	1.5	1200	50	1200	1600	75	1.15	520	M722	310
7MBR100XXA120-50	1200	100	445	1.45	1200	75	1200	1600	100	1.05	775	M722	310
7MBR150XXE120-50	1200	150	880	1.5	1200	75	1200	1600	150	1.05	1400	M722	310
7MBR35XYA120-50	1200	35	200	1.5	1200	25	1200	1600	35	1.05	385	M721	200
7MBR50XYA120-50	1200	50	250	1.5	1200	35	1200	1600	50	1.05	520	M721	200
7MBR75XE120-50	1200	75	455	1.55	1200	35	1200	1600	75	1.15	520	M721	200
7MBR75XZA120-50	1200	75	335	1.5	1200	50	1200	1600	75	1.15	520	M722	310
7MBR100XZA120-50	1200	100	445	1.45	1200	75	1200	1600	100	1.05	775	M722	310
7MBR150XZE120-50	1200	150	880	1.5	1200	75	1200	1600	150	1.05	1400	M722	310

Note1: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.

Note2: "-80" : Pre-Applied Thermal-Interface-Material

 $V_{CE(sat)}$, V_{FM} : at $T_{vj}=25^\circ\text{C}$, Chip

■ V series

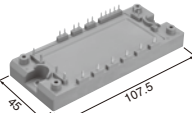
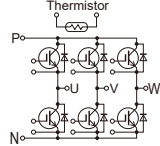
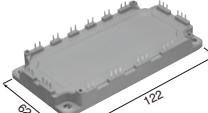
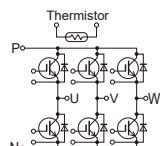
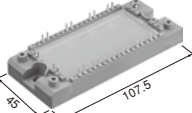
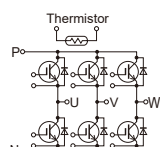
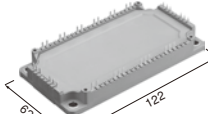
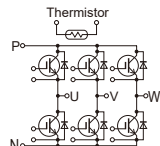
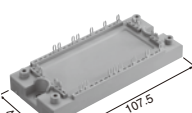
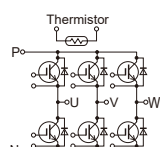
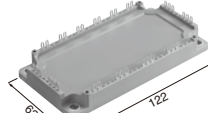
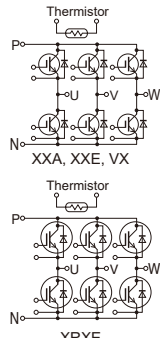
Device type	Inverter [IGBT]				Brake [IGBT+FWD]			Converter [Diode]				Package	Net mass Grams
	V_{CES}	I_C	P_{tot}	$V_{CE(sat)}$	V_{CES}	I_C	V_{RRM}	V_{RRM}	I_O	V_{FM}	I_{FSM}		
	Volts	Cont. Amps.	Watts	typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	typ. Volts	Amps.		
7MBR25VW120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M721	200
7MBR35VW120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M721	200
7MBR50VW120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M721	200
7MBR50VX120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
7MBR50VX120-80	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
7MBR75VX120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
7MBR75VX120-80	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
7MBR100VX120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
7MBR100VX120-80	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
7MBR150VX120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310
7MBR150VX120-80	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310
7MBR25VY120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.42	155	M721	200
7MBR35VY120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M721	200
7MBR50VY120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M721	200
7MBR50VZ120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
7MBR50VZ120-80	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
7MBR75VZ120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
7MBR75VZ120-80	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
7MBR100VZ120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
7MBR100VZ120-80	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
7MBR150VZ120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310
7MBR150VZ120-80	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310

Note1: "-80" : Pre-Applied Thermal-Interface-Material

 $V_{CE(sat)}$, V_{FM} : at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module 6-Pack < X series / V series >

6-Pack EconoPACK™ 600V, 1200V class

Solder pins		Ic	600V	1200V	
			V series	X series	V series
 M636		50A	6MBI50VA-060-50		6MBI50VA-120-50
		75A	6MBI75VA-060-50		6MBI75VA-120-50
		100A	6MBI100VA-060-50		6MBI100VA-120-50
 M633		100A			6MBI100VB-120-50
		150A	6MBI150VB-060-50		6MBI150VB-120-50
		180A			6MBI180VB-120-50
					6MBI180VB-120-55
 M669		100A		6MBI100XAE120-50	
 M668		100A		6MBI100XBA120-50	
		150A		6MBI150XBA120-50	
		200A		6MBI200XBA120-50	
				6MBI200XBE120-50	
		250A		6MBI250XRBE120-50	
 M647		50A	6MBI50VW-060-50		6MBI50VW-120-50
		75A	6MBI75VW-060-50		6MBI75VW-120-50
		100A	6MBI100VW-060-50		6MBI100VW-120-50
 M648		100A		6MBI100XXA120-50	6MBI100VX-120-50
					6MBI100VX-120-80
		150A	6MBI150VX-060-50	6MBI150XXA120-50	6MBI150VX-120-50
			6MBI150VX-060-80		6MBI150VX-120-80
		180A			6MBI180VX-120-50
					6MBI180VX-120-80
					6MBI180VX-120-55
					6MBI180VX-120-85
		200A		6MBI200XXA120-50	
				6MBI200XXE120-50	
		250A		6MBI250XRXE120-50	

Dimension [mm]

Note: EconoPACK™ is registered trademarks of Infineon Technologies AG, Germany.

■ X series

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
			Cont.		typ.	I_C	$t_{d(on)}$	$t_{d(off)}$	t_f		
	Volts	Volts	Amps.	Watts	Volts	Amps.	typ.	typ.	typ.		
							μ sec.	μ sec.	μ sec.		Grams
6MBI100XAE120-50	1200	± 20	100	685	1.45	100	0.21	0.29	0.1	M669	200
6MBI100XBA120-50	1200	± 20	100	440	1.45	100	0.21	0.29	0.1	M668	310
6MBI150XBA120-50	1200	± 20	150	625	1.40	150	0.31	0.35	0.15	M668	310
6MBI200XBA120-50	1200	± 20	200	750	1.45	200	0.27	0.34	0.12	M668	310
6MBI200XBE120-50	1200	± 20	200	1000	1.45	200	0.27	0.34	0.12	M668	310
6MBI250XRBE120-50	1200	± 20	250	TBD	TBD	250	TBD	TBD	TBD	M668	310
6MBI100XXA120-50	1200	± 20	100	440	1.45	100	0.21	0.29	0.1	M648	310
6MBI150XXA120-50	1200	± 20	150	625	1.40	150	0.31	0.35	0.15	M648	310
6MBI200XXA120-50	1200	± 20	200	750	1.45	200	0.27	0.34	0.12	M648	310
6MBI200XXE120-50	1200	± 20	200	1000	1.45	200	0.27	0.34	0.12	M648	310
6MBI250XRXE120-50	1200	± 20	250	TBD	TBD	250	TBD	TBD	TBD	M648	310

■ V series

Device type	V_{CES}	V_{GES}	I_C Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_C	$t_{d(on)}$ typ.	$t_{d(off)}$ typ.	t_f typ.		
	Volts	Volts	Amps.	Watts	Volts	Amps.	μ sec.	μ sec.	μ sec.		
6MBI50VA-060-50	600	± 20	50	200	1.6	50	0.36	0.52	0.03	M636	180
6MBI75VA-060-50	600	± 20	75	275	1.6	75	0.36	0.52	0.03	M636	180
6MBI100VA-060-50	600	± 20	100	335	1.6	100	0.36	0.52	0.03	M636	180
6MBI150VB-060-50	600	± 20	150	485	1.6	150	0.36	0.52	0.03	M633	300
6MBI50VW-060-50	600	± 20	50	215	1.6	50	0.36	0.52	0.03	M647	200
6MBI75VW-060-50	600	± 20	75	300	1.6	75	0.36	0.52	0.03	M647	200
6MBI100VW-060-50	600	± 20	100	335	1.6	100	0.36	0.52	0.03	M647	200
6MBI150VX-060-50	600	± 20	150	485	1.6	150	0.36	0.52	0.03	M648	300
6MBI150VX-060-80	600	± 20	150	485	1.6	150	0.36	0.52	0.03	M648	300
6MBI50VA-120-50	1200	± 20	50	280	1.85	50	0.39	0.53	0.06	M636	180
6MBI75VA-120-50	1200	± 20	75	385	1.85	75	0.39	0.53	0.06	M636	180
6MBI100VA-120-50	1200	± 20	100	520	1.75	100	0.39	0.53	0.06	M636	180
6MBI100VB-120-50	1200	± 20	100	520	1.75	100	0.39	0.53	0.06	M633	300
6MBI150VB-120-50	1200	± 20	150	770	1.75	150	0.39	0.53	0.06	M633	300
6MBI180VB-120-50	1200	± 20	150	835	1.85	200	0.39	0.53	0.06	M633	300
6MBI180VB-120-55	1200	± 20	150	1075	1.85	200	0.39	0.53	0.06	M633	300
6MBI50VW-120-50	1200	± 20	50	280	1.85	50	0.39	0.53	0.06	M647	200
6MBI75VW-120-50	1200	± 20	75	385	1.85	75	0.39	0.53	0.06	M647	200
6MBI100VW-120-50	1200	± 20	100	520	1.75	100	0.39	0.53	0.06	M647	200
6MBI100VX-120-50	1200	± 20	100	520	1.75	100	0.39	0.53	0.06	M648	300
6MBI100VX-120-80	1200	± 20	100	520	1.75	100	0.39	0.53	0.06	M648	300
6MBI150VX-120-50	1200	± 20	150	770	1.75	150	0.39	0.53	0.06	M648	300
6MBI150VX-120-80	1200	± 20	150	770	1.75	150	0.39	0.53	0.06	M648	300
6MBI180VX-120-50	1200	± 20	150	835	1.85	200	0.39	0.53	0.06	M648	300
6MBI180VX-120-80	1200	± 20	150	835	1.85	200	0.39	0.53	0.06	M648	300
6MBI180VX-120-55	1200	± 20	150	1075	1.85	200	0.39	0.53	0.06	M648	300
6MBI180VX-120-85	1200	± 20	150	1075	1.85	200	0.39	0.53	0.06	M648	300

Note1: 6MBI180VB-120-55, 6MBI180VX-120-55; Low Thermal Impedance Version

Note2: "-80", "-85" : Pre-Applied Thermal-Interface-Material for "-50", "-55"

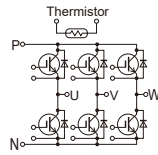
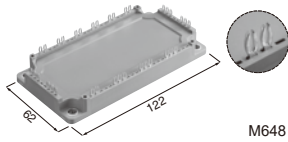
○: Under development

 $V_{CE(sat)}$ at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module 6-Pack < V series >

■ 6-Pack EconoPACK™ 1700V class

Press fit pins



Ic	1700V
	V series
100A	6MBI100VX-170-50
	6MBI100VX-170-80

Dimension [mm]

Device type	V _{CES}	V _{GES}	I _C	P _{tot}	V _{CE(sat)} (V _{GE} =15V)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	typ.	I _C	t _{on}	t _{off}	t _f		
			Cont.			Amps.	μ sec.	μ sec.	μ sec.		Grams
6MBI100VX-170-50	1700	±20	100	665	2.00	100	0.63	0.70	0.10	M648	300
6MBI100VX-170-80	1700	±20	100	665	2.00	100	0.63	0.70	0.10	M648	300

Note1: EconoPACK™ is registered trademarks of Infineon Technologies AG, Germany.

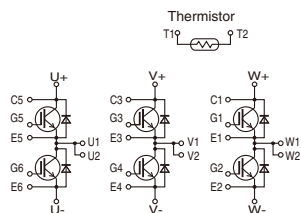
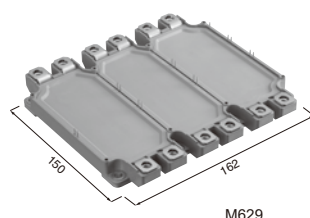
Note2: "-80" : Pre-Applied Thermal-Interface-Material for "-50"

V_{CE(sat)}: at T_{vj}=25°C, Chip

IGBT Module 6-Pack < V series >

6-Pack EconoPACK™+ 1200V, 1700V class

High power 6-pack



I_C	1200V	1700V
	V series	V series
225A	6MBI225V-120-50	
300A	6MBI300V-120-50	6MBI300V-170-50
	6MBI300V-120-80	
450A	6MBI450V-120-50	6MBI450V-170-50
		6MBI450V-170-80
550A	6MBI550V-120-50	

Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	typ.	I_C	t_{on}	t_{off}	t_f		
							typ.	typ.	typ.		Grams
							$\mu sec.$	$\mu sec.$	$\mu sec.$		
6MBI225V-120-50	1200	± 20	225	1070	1.85	225	0.55	1.05	0.11	M629	950
6MBI300V-120-50	1200	± 20	300	1600	1.75	300	0.55	1.05	0.11	M629	950
6MBI300V-120-80	1200	± 20	300	1600	1.75	300	0.55	1.05	0.11	M629	950
6MBI450V-120-50	1200	± 20	450	2250	1.75	450	0.55	1.05	0.11	M629	950
6MBI550V-120-50	1200	± 20	550	2500	1.85	600	0.55	1.05	0.11	M629	950
6MBI300V-170-50	1700	± 20	300	1665	2.00	300	0.90	1.30	0.10	M629	950
6MBI450V-170-50	1700	± 20	450	2500	2.00	450	0.90	1.30	0.10	M629	950
6MBI450V-170-80	1700	± 20	450	2500	2.00	450	0.90	1.30	0.10	M629	950

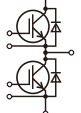
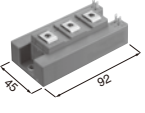
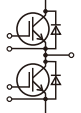
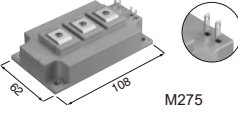
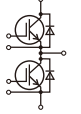
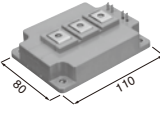
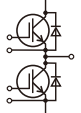
Note1: EconoPACK™+ is registered trademarks of Infineon Technologies AG, Germany.

Note2: "-80" : Pre-Applied Thermal-Interface-Material

 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip

IGBT Module 2-Pack < X series / V series >

■ Standard 2-Pack 600V, 650V class

		I_C	650V	600V
			X series	V series
 M263 		100A		2MBI100VA-060-50
		150A	2MBI150XAA065-50	2MBI150VA-060-50
		200A	2MBI200XAA065-50	2MBI200VA-060-50
 M274 		300A	2MBI300XBE065-50	2MBI300VB-060-50
		400A	2MBI400XBE065-50	2MBI400VB-060-50
 M275 		400A	2MBI400XDE065-50	2MBI400VD-060-50
		600A	2MBI600XDE065-50	2MBI600VD-060-50
 M277 		600A	2MBI600XEE065-50	2MBI600VE-060-50
				2MBI600VE-060-80

Dimension [mm]

■ X series

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	typ.	I_C	$t_{d(on)}$	$t_{d(off)}$	t_f		
					Volts	Amps.	typ.	typ.	typ.		Grams
● 2MBI150XAA065-50	650	±20	150	435	1.30	150	0.39	0.38	0.11	M263	180
● 2MBI200XAA065-50	650	±20	200	545	1.30	200	0.35	0.57	0.07	M263	180
2MBI300XBE065-50	650	±20	300	1160	1.30	300	0.37	0.35	0.07	M274	240
2MBI400XBE065-50	650	±20	400	1740	1.30	400	0.35	0.68	0.07	M274	240
2MBI400XDE065-50	650	±20	400	1945	1.30	400	0.48	0.59	0.07	M275	370
2MBI600XDE065-50	650	±20	600	2795	1.30	600	0.49	0.61	0.11	M275	370
2MBI600XEE065-50	650	±20	600	2795	1.30	600	0.41	0.53	0.11	M277	470

■ V series

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	typ.	I_C	$t_{d(on)}$	$t_{d(off)}$	t_f		
					Volts	Amps.	typ.	typ.	typ.		Grams
2MBI100VA-060-50	600	± 20	100	330	1.60	100	0.65	0.60	0.04	M263	180
2MBI150VA-060-50	600	± 20	150	480	1.60	150	0.65	0.60	0.04	M263	180
2MBI200VA-060-50	600	± 20	200	640	1.60	200	0.65	0.60	0.04	M263	180
2MBI300VB-060-50	600	± 20	300	1360	1.60	300	0.65	0.60	0.07	M274	240
2MBI400VB-060-50	600	± 20	400	1970	1.60	400	0.65	0.60	0.07	M274	240
2MBI400VD-060-50	600	± 20	400	1970	1.60	400	0.65	0.60	0.07	M275	370
2MBI600VD-060-50	600	± 20	600	2940	1.60	600	0.75	0.75	0.07	M275	370
2MBI600VE-060-50	600	± 20	600	2940	1.60	600	0.75	0.75	0.07	M277	470
2MBI600VE-060-80	600	± 20	600	2940	1.60	600	0.75	0.75	0.07	M277	470

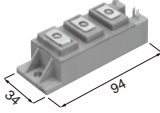
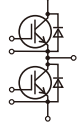
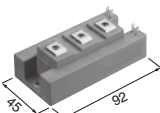
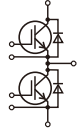
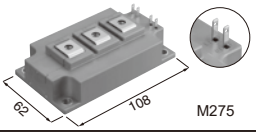
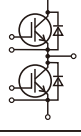
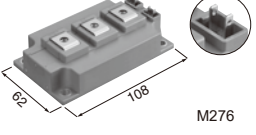
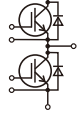
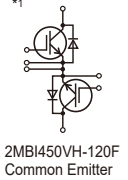
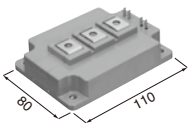
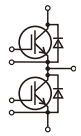
Note : -80 : Pre-Applied Thermal-Interface-Material

● : New products

 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}C$, Chip

IGBT Module 2-Pack < X series / V series >

Standard 2-Pack 1200V class

	I_C	1200V	
		X series	V series
 M263 	75A		2MBI75VA-120-50
	100A	2MBI100XAA120-50	2MBI100VA-120-50
	150A	2MBI150XAA120-50	2MBI150VA-120-50
	200A	2MBI200XAA120-50	
 M274 	150A		2MBI150VB-120-50
	200A	2MBI200XBE120-50	2MBI200VB-120-50
	300A	2MBI300XBE120-50	
 M275 	300A		2MBI300VD-120-50
	400A	2MBI400XDE120-50	2MBI400VD-120-50
	600A	2MBI600XDE120-50	
 M276  	200A		2MBI200VH-120-50 2MBI200VH-120-80
	300A	2MBI300XHA120-50	2MBI300VH-120-50 2MBI300VH-120-80
	450A	2MBI450XHA120-50	2MBI450VH-120-50 2MBI450VH-120-80 2MBI450VH-120F-50*1 2MBI450VH-120F-80*1
	600A	2MBI600XHA120-50	
 M277 	300A		2MBI300VE-120-50 2MBI300VE-120-80
	450A	2MBI450XEE120-50	2MBI450VE-120-50 2MBI450VE-120-80
	600A	2MBI600XEE120-50	2MBI600VE-120-50 2MBI600VE-120-80

Dimension [mm]

X series

Device type	V_{CES} Volts	V_{GES} Volts	I_C Cont. Amps.	P_{tot} Watts	$V_{CE(sat)}$ ($V_{GE}=15V$) typ.		Switching time			Package	Net mass Grams
					$V_{CE(sat)}$ Volts	I_C Amps.	$t_{d(on)}$ typ. $\mu sec.$	$t_{d(off)}$ typ. $\mu sec.$	t_f typ. $\mu sec.$		
● 2MBI100XAA120-50	1200	± 20	100	460	1.40	100	0.34	0.33	0.12	M263	180
● 2MBI150XAA120-50	1200	± 20	150	575	1.50	150	0.25	0.32	0.16	M263	180
● 2MBI200XAA120-50	1200	± 20	200	735	1.45	200	0.34	0.32	0.07	M263	180
2MBI200XBE120-50	1200	± 20	200	1150	1.40	200	0.32	0.36	0.13	M274	240
2MBI300XBE120-50	1200	± 20	300	1760	1.50	300	0.23	0.35	0.11	M274	240
2MBI400XDE120-50	1200	± 20	400	2975	1.40	400	0.38	0.36	0.13	M275	370
2MBI600XDE120-50	1200	± 20	600	3985	1.45	600	0.40	0.37	0.11	M275	370
2MBI300XHA120-50	1200	± 20	300	1475	1.45	300	0.40	0.34	0.15	M276	370
2MBI450XHA120-50	1200	± 20	450	1850	1.45	450	0.39	0.35	0.13	M276	370
2MBI600XHA120-50	1200	± 20	600	2340	1.45	600	0.40	0.37	0.11	M276	370
2MBI450XEE120-50	1200	± 20	450	2975	1.45	450	0.35	0.34	0.14	M277	470
2MBI600XEE120-50	1200	± 20	600	3985	1.40	600	0.42	0.40	0.12	M277	470

● : New products

 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip

■ V series

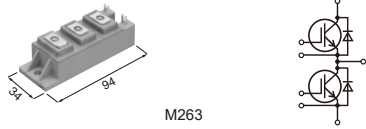
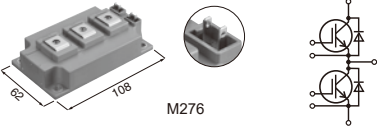
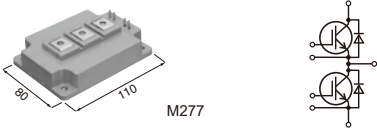
Device type	V_{CES} Volts	V_{GES} Volts	I_C Cont. Amps.	P_{tot} Watts	$V_{CE(sat)}$ ($V_{GE}=15V$) typ.		Switching time			Package	Net mass Grams
					I_C Amps.	I_C Amps.	t_{on} typ. $\mu sec.$	t_{off} typ. $\mu sec.$	t_f typ. $\mu sec.$		
2MBI75VA-120-50	1200	± 20	75	390	1.85	75	0.60	0.60	0.04	M263	180
2MBI100VA-120-50	1200	± 20	100	555	1.85	100	0.60	0.60	0.04	M263	180
2MBI150VA-120-50	1200	± 20	150	785	1.85	150	0.60	0.60	0.04	M263	180
2MBI150VB-120-50	1200	± 20	150	1070	1.85	150	0.60	0.80	0.08	M274	240
2MBI200VB-120-50	1200	± 20	200	1500	1.75	200	0.60	0.80	0.08	M274	240
2MBI300VD-120-50	1200	± 20	300	2200	1.85	300	0.60	0.80	0.08	M275	370
2MBI400VD-120-50	1200	± 20	400	3330	1.75	400	0.60	0.80	0.08	M275	370
2MBI200VH-120-50	1200	± 20	200	1110	1.75	200	0.60	0.80	0.08	M276	370
2MBI200VH-120-80	1200	± 20	200	1110	1.75	200	0.60	0.80	0.08	M276	370
2MBI300VH-120-50	1200	± 20	300	1600	1.75	300	0.60	0.80	0.08	M276	370
2MBI300VH-120-80	1200	± 20	300	1600	1.75	300	0.60	0.80	0.08	M276	370
2MBI450VH-120-50	1200	± 20	450	2400	1.80	450	0.60	0.80	0.08	M276	370
2MBI450VH-120-80	1200	± 20	450	2400	1.80	450	0.60	0.80	0.08	M276	370
2MBI450VH-120F-50	1200	± 20	450	2400	1.80	450	0.60	0.80	0.08	M276	370
2MBI450VH-120F-80	1200	± 20	450	2400	1.80	450	0.60	0.80	0.08	M276	370
2MBI300VE-120-50	1200	± 20	300	2200	1.85	300	0.60	0.80	0.08	M277	470
2MBI300VE-120-80	1200	± 20	300	2200	1.85	300	0.60	0.80	0.08	M277	470
2MBI450VE-120-50	1200	± 20	450	3350	1.80	450	0.60	0.80	0.08	M277	470
2MBI450VE-120-80	1200	± 20	450	3350	1.80	450	0.60	0.80	0.08	M277	470
2MBI600VE-120-50	1200	± 20	600	4800	1.75	600	0.60	0.80	0.08	M277	470
2MBI600VE-120-80	1200	± 20	600	4800	1.75	600	0.60	0.80	0.08	M277	470

Note: -80 : Pre-Applied Thermal-Interface-Material

 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}C$, Chip

IGBT Module 2-Pack < X series / V series >

Standard 2-Pack 1700V class

	I_C	1700V	
		X series	V series
 M263	75A	2MBI75XAA170-50	2MBI75VA-170-50
	100A	2MBI100XAA170-50	2MBI100VA-170-50
	150A	2MBI150XAA170-50	
 M276	150A	2MBI150XHA170-50	2MBI150VH-170-50
			2MBI150VH-170-80
	200A	2MBI200XHA170-50	2MBI200VH-170-50
			2MBI200VH-170-80
	300A	2MBI300XHA170-50	2MBI300VH-170-50
			2MBI300VH-170-80
 M277	400A	2MBI400XHA170-50	
	300A	2MBI300XEE170-50	2MBI300VE-170-50
			2MBI300VE-170-80
	400A	2MBI400XEE170-50	2MBI400VE-170-50
			2MBI400VE-170-80

Dimension [mm]

X series

Device type	V_{CES}	V_{GES}	I_C Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_C	$t_{d(on)}$	$t_{d(off)}$	t_f		
	Volts	Volts	Amps.	Watts	Volts	Amps.	typ. μ sec.	typ. μ sec.	typ. μ sec.		Grams
● 2MBI75XAA170-50	1700	± 20	75	460	1.60	75	0.45	0.85	0.45	M263	180
● 2MBI100XAA170-50	1700	± 20	100	560	1.65	100	0.41	0.42	0.47	M263	180
● 2MBI150XAA170-50	1700	± 20	150	730	1.60	150	0.43	0.43	0.44	M263	180
● 2MBI150XHA170-50	1700	± 20	150	925	1.60	150	0.37	0.43	0.50	M276	370
● 2MBI200XHA170-50	1700	± 20	200	1125	1.65	200	0.40	0.60	0.63	M276	370
● 2MBI300XHA170-50	1700	± 20	300	1685	1.60	300	0.44	0.62	0.60	M276	370
● 2MBI400XHA170-50	1700	± 20	400	2270	1.65	400	0.45	0.65	0.64	M276	370
● 2MBI300XEE170-50	1700	± 20	300	3025	1.60	300	0.44	0.60	0.54	M277	470
● 2MBI400XEE170-50	1700	± 20	400	3655	1.65	400	0.45	0.65	0.64	M277	470

V series

Device type	V_{CES}	V_{GES}	I_C Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_C	$t_{d(on)}$	$t_{d(off)}$	t_f		
	Volts	Volts	Amps.	Watts	Volts	Amps.	typ. μ sec.	typ. μ sec.	typ. μ sec.		Grams
2MBI75VA-170-50	1700	± 20	75	555	2.00	75	1.25	1.30	0.15	M263	180
2MBI100VA-170-50	1700	± 20	100	665	2.00	100	1.25	1.30	0.15	M263	180
2MBI150VH-170-50	1700	± 20	150	1110	2.00	150	0.95	1.05	0.14	M276	370
2MBI150VH-170-80	1700	± 20	150	1110	2.00	150	0.95	1.05	0.14	M276	370
2MBI200VH-170-50	1700	± 20	200	1250	2.00	200	1.15	1.05	0.14	M276	370
2MBI200VH-170-80	1700	± 20	200	1250	2.00	200	1.15	1.05	0.14	M276	370
2MBI300VH-170-50	1700	± 20	300	1805	2.00	300	1.15	1.05	0.14	M276	370
2MBI300VH-170-80	1700	± 20	300	1805	2.00	300	1.15	1.05	0.14	M276	370
2MBI300VE-170-50	1700	± 20	300	2830	2.00	300	1.15	1.05	0.14	M277	470
2MBI300VE-170-80	1700	± 20	300	2830	2.00	300	1.15	1.05	0.14	M277	470
2MBI400VE-170-50	1700	± 20	400	3840	2.00	400	1.15	1.05	0.14	M277	470
2MBI400VE-170-80	1700	± 20	400	3840	2.00	400	1.15	1.05	0.14	M277	470

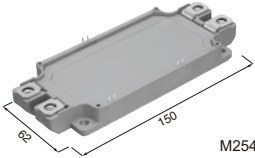
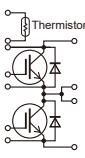
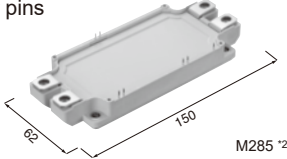
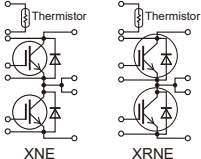
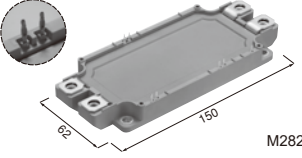
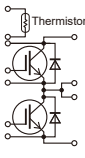
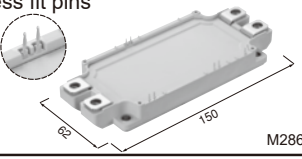
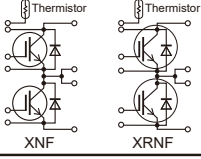
Note : -80 : Pre-Applied Thermal-Interface-Material

● : New products

 $V_{CE(sat)}$: at $T_{vj}=25^\circ\text{C}$, Chip

IGBT Module 2-Pack < X series / V series >

■ Standard 2-Pack 1200V class

Solder pins		1200V			
		I_C	X series	V series	V series *1 With SiN-substrate
 M254		225A	2MBI225XNA120-50	2MBI225VN-120-50 2MBI225VN-120-80	2MBI225VN-120S-50
		300A	2MBI300XNA120-50	2MBI300VN-120-50 2MBI300VN-120-80	2MBI300VN-120S-50 2MBI300VN-120S-80
		450A	2MBI450XNA120-50	2MBI450VN-120-50 2MBI450VN-120-80	2MBI450VN-120S-50 2MBI450VN-120S-80
		600A	2MBI600XNG120-50		2MBI600VN-120-50 2MBI600VN-120-80
 M285 *2	 XNE	600A	2MBI600XNE120-50		
		800A	2MBI800XNE120-50		
		1000A	2MBI1000XRNE120-50		
 M282		225A	2MBI225XNB120-50	2MBI225VX-120-50 2MBI225VX-120-80	
		300A	2MBI300XNB120-50	2MBI300VX-120-50 2MBI300VX-120-80	
		450A	2MBI450XNB120-50	2MBI450VX-120-50 2MBI450VX-120-80	
		600A	2MBI600XNH120-50		2MBI600VX-120-50 2MBI600VX-120-80
 M286 *2	 XNF	600A	2MBI600XNF120-50		
		800A	2MBI800XNF120-50		
		1000A	2MBI1000XRNF120-50		

Dimension [mm]

■ X series

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps. Cont.	Watts	typ.	I_C	$t_{d(on)}$ typ.	$t_{d(off)}$ typ.	t_f typ.		
					Volts	Amps.	$\mu sec.$	$\mu sec.$	$\mu sec.$		Grams
2MBI225XNA120-50	1200	± 20	225	1030	1.45	225	0.23	0.33	0.05	M254	350
2MBI300XNA120-50	1200	± 20	300	1325	1.40	300	0.26	0.36	0.05	M254	350
2MBI450XNA120-50	1200	± 20	450	1760	1.40	450	0.37	0.40	0.07	M254	350
2MBI600XNG120-50	1200	± 20	600	3125	1.45	600	0.42	0.42	0.07	M254	350
2MBI600XNE120-50	1200	± 20	600	3125	1.45	600	0.42	0.42	0.07	M285 *2	350
2MBI800XNE120-50	1200	± 20	800	4050	1.45	800	0.47	0.45	0.08	M285 *2	350
2MBI1000XRNE120-50	1200	± 20	1000	8330	1.60	1000	0.36	0.50	0.09	M285 *2	350
2MBI225XNB120-50	1200	± 20	225	1030	1.45	225	0.23	0.33	0.05	M282	350
2MBI300XNB120-50	1200	± 20	300	1325	1.40	300	0.26	0.36	0.05	M282	350
2MBI450XNB120-50	1200	± 20	450	1760	1.40	450	0.37	0.40	0.07	M282	350
2MBI600XNH120-50	1200	± 20	600	3125	1.45	600	0.42	0.42	0.07	M282	350
2MBI600XNF120-50	1200	± 20	600	3125	1.45	600	0.42	0.42	0.07	M286 *2	350
2MBI800XNF120-50	1200	± 20	800	4050	1.45	800	0.47	0.45	0.08	M286 *2	350
2MBI1000XRNF120-50	1200	± 20	1000	8330	1.60	1000	0.36	0.50	0.09	M286 *2	350

*1 Low Thermal Impedance Version

*2 Low thermal impedance and high tracking capability type

 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip

■ V series

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Cont. Amps.	Watts	typ. Volts	I_C Amps.	t_{on} typ. $\mu sec.$	t_{off} typ. $\mu sec.$	t_f typ. $\mu sec.$		
2MBI225VN-120-50	1200	± 20	225	1070	1.85	225	0.55	1.05	0.11	M254	350
2MBI225VN-120-80	1200	± 20	225	1070	1.85	225	0.55	1.05	0.11	M254	350
2MBI225VN-120S-50 *3	1200	± 20	225	1360	1.85	225	0.40	0.55	0.05	M254	350
2MBI300VN-120-50	1200	± 20	300	1595	1.75	300	0.55	1.05	0.11	M254	350
2MBI300VN-120-80	1200	± 20	300	1595	1.75	300	0.55	1.05	0.11	M254	350
2MBI300VN-120S-50 *3	1200	± 20	300	2000	1.75	300	0.45	0.65	0.06	M254	350
2MBI300VN-120S-80 *3	1200	± 20	300	2000	1.75	300	0.45	0.65	0.06	M254	350
2MBI450VN-120-50	1200	± 20	450	2270	1.75	450	0.55	1.05	0.11	M254	350
2MBI450VN-120-80	1200	± 20	450	2270	1.75	450	0.55	1.05	0.11	M254	350
2MBI450VN-120S-50 *3	1200	± 20	450	3000	1.75	450	0.47	0.70	0.07	M254	350
2MBI450VN-120S-80 *3	1200	± 20	450	3000	1.75	450	0.47	0.70	0.07	M254	350
2MBI600VN-120-50	1200	± 20	600	3750	1.85	600	0.55	1.05	0.11	M254	350
2MBI600VN-120-80	1200	± 20	600	3750	1.85	600	0.55	1.05	0.11	M254	350
2MBI225VX-120-50	1200	± 20	225	1070	1.85	225	0.55	1.05	0.11	M282	350
2MBI225VX-120-80	1200	± 20	225	1070	1.85	225	0.55	1.05	0.11	M282	350
2MBI300VX-120-50	1200	± 20	300	1595	1.75	300	0.55	1.05	0.11	M282	350
2MBI300VX-120-80	1200	± 20	300	1595	1.75	300	0.55	1.05	0.11	M282	350
2MBI450VX-120-50	1200	± 20	450	2270	1.75	450	0.55	1.05	0.11	M282	350
2MBI450VX-120-80	1200	± 20	450	1595	1.75	450	0.55	1.05	0.11	M282	350
2MBI600VX-120-50	1200	± 20	600	3750	1.85	600	0.55	1.05	0.11	M282	350
2MBI600VX-120-80	1200	± 20	600	3750	1.85	600	0.55	1.05	0.11	M282	350

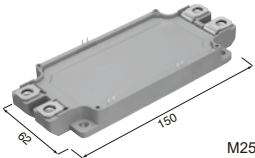
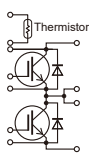
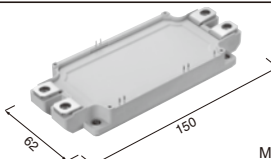
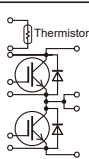
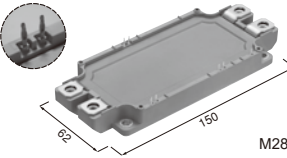
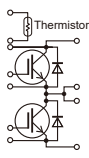
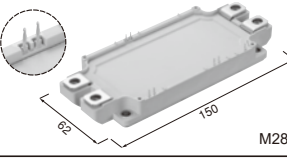
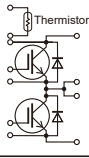
*3 The products with 'S': Low Thermal Impedance Version

Note: -80 : Pre-Applied Thermal-Interface-Material

 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}C$, Chip

IGBT Module 2-Pack < X series / V series >

■ Standard 2-Pack 1700V class

Solder pins	 M254		I_C	1700V		
				X series	V series	V series *1 With SiN-substrate
Solder pins	 M285 *2		225A	2MBI225XNA170-50		
			300A	2MBI300XNA170-50	2MBI300VN-170-50 2MBI300VN-170-80	
			450A	2MBI450XNA170-50	2MBI450VN-170-50 2MBI450VN-170-80	
			550A			2MBI550VN-170-50 2MBI550VN-170-80
			600A	2MBI600XNG170-50		
			600A	2MBI600XNE170-50		
Press fit pins	 M282		225A	2MBI225XNB170-50	2MBI225VX-170-50 2MBI225VX-170-80	
			300A	2MBI300XNB170-50	2MBI300VX-170-50 2MBI300VX-170-80	
			450A	2MBI450XNB170-50	2MBI450VX-170-50 2MBI450VX-170-80	
			550A			2MBI550VX-170-50 2MBI550VX-170-80
			600A	2MBI600XNH170-50		
			600A	2MBI600XNF170-50		
Press fit pins	 M286 *2					

Dimension [mm]

■ X series

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps. Cont.	Watts	typ.	I_C	$t_{d(on)}$ typ. $\mu sec.$	$t_{d(off)}$ typ. $\mu sec.$	t_f typ. $\mu sec.$		
2MBI225XNA170-50	1700	± 20	225	1470	1.60	225	0.35	0.46	0.13	M254	350
2MBI300XNA170-50	1700	± 20	300	1720	1.60	300	0.39	0.49	0.13	M254	350
2MBI450XNA170-50	1700	± 20	450	2340	1.60	450	0.41	0.52	0.14	M254	350
2MBI600XNG170-50	1700	± 20	600	3845	1.70	600	0.49	0.58	0.15	M254	350
2MBI600XNE170-50	1700	± 20	600	3845	1.70	600	0.49	0.58	0.15	M285 *2	350
2MBI225XNB170-50	1700	± 20	225	1470	1.60	225	0.35	0.46	0.13	M282	350
2MBI300XNB170-50	1700	± 20	300	1720	1.60	300	0.39	0.49	0.13	M282	350
2MBI450XNB170-50	1700	± 20	450	2340	1.60	450	0.41	0.52	0.14	M282	350
2MBI600XNH170-50	1700	± 20	600	3845	1.65	600	0.49	0.58	0.15	M282	350
2MBI600XNF170-50	1700	± 20	600	3845	1.65	600	0.49	0.58	0.15	M286 *2	350

*1 Low Thermal Impedance Version

*2 Low thermal impedance and high tracking capability type

 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip

■ V series

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Cont. Amps.	Watts	typ. Volts	I_C Amps.	t_{on} typ. μ sec.	t_{off} typ. μ sec.	t_f typ. μ sec.		
2MBI300VN-170-50	1700	± 20	300	1665	2.00	300	0.90	1.30	0.10	M254	350
2MBI300VN-170-80	1700	± 20	300	1665	2.00	300	0.90	1.30	0.10	M254	350
2MBI450VN-170-50	1700	± 20	450	2500	2.00	450	0.90	1.30	0.10	M254	350
2MBI450VN-170-80	1700	± 20	450	2500	2.00	450	0.90	1.30	0.10	M254	350
2MBI550VN-170-50 *3	1700	± 20	550	3750	2.15	550	1.00	1.30	0.10	M254	350
2MBI550VN-170-80 *3	1700	± 20	550	3750	2.15	550	1.00	1.30	0.10	M254	350
2MBI225VX-170-50	1700	± 20	225	1500	2.00	225	0.90	1.05	0.08	M282	350
2MBI225VX-170-80	1700	± 20	225	1500	2.00	225	0.90	1.05	0.08	M282	350
2MBI300VX-170-50	1700	± 20	300	1665	2.00	300	0.90	1.30	0.10	M282	350
2MBI300VX-170-80	1700	± 20	300	1665	2.00	300	0.90	1.30	0.10	M282	350
2MBI450VX-170-50	1700	± 20	450	2500	2.00	450	0.90	1.30	0.10	M282	350
2MBI450VX-170-80	1700	± 20	450	2500	2.00	450	0.90	1.30	0.10	M282	350
2MBI550VX-170-50 *3	1700	± 20	550	3750	2.15	550	1.00	1.30	0.10	M282	350
2MBI550VX-170-80 *3	1700	± 20	550	3750	2.15	550	1.00	1.30	0.10	M282	350

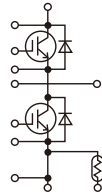
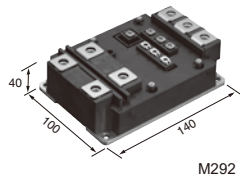
*3 550A Low Thermal Impedance Version

Note: -80 : Pre-Applied Thermal-Interface-Material

$V_{CE(sat)}$: at $T_{vj}=25^{\circ}C$, Chip

IGBT Module 2-Pack < X series >

■ High Power Module HPnC 1700V, 3300V class



I_C	1700V	3300V
	X series	X series
450A		2MBI450XVF330-50
1000A	2MBI1000XVF170-50	
1200A	2MBI1200XVF170-50	

Dimension [mm]

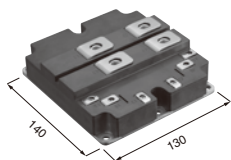
Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Cont. Amps.	Watts	typ. Volts	I_C Amps.	$t_{d(on)}$ typ. μ sec.	$t_{d(off)}$ typ. μ sec.	t_f typ. μ sec.		
○ 2MBI1000XVF170-50	1700	± 20	1000	4340	1.7	1000	0.75	1.3	0.6	M292	790
○ 2MBI1200XVF170-50	1700	± 20	1200	TBD	1.7	1200	TBD	TBD	TBD	M292	790
○ 2MBI450XVF330-50	3300	± 20	450	TBD	TBD	450	TBD	TBD	TBD	M292	790

○ : Under development

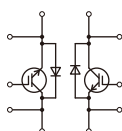
 $V_{CE(sat)}$: at $T_{vj}=25^\circ\text{C}$, Chip

IGBT Module 2-Pack < V series >

High Power Module 1200V, 1700V class



M256, M278



I_C	1200V	1700V	
	V series	V series	
	Cu-baseplate	Cu-baseplate	AlSiC-baseplate
600A	2MBI600VG-120P	2MBI600VG-170E	2MBI600VT-170E
800A	2MBI800VG-120P	2MBI800VG-170E	2MBI800VT-170E
1200A	2MBI1200VG-120P	2MBI1200VG-170E	2MBI1200VT-170E

Dimension [mm]

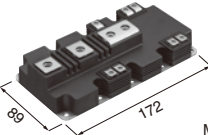
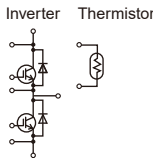
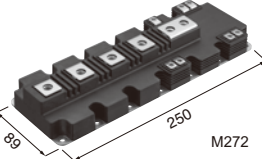
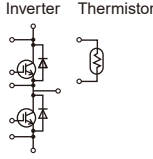
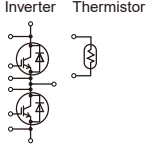
Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps. Cont.	Watts	Volts typ.	Amps. I_C	t_{on} typ. $\mu sec.$	t_{off} typ. $\mu sec.$	t_f typ. $\mu sec.$		
2MBI600VG-120P	1200	± 20	600	3940	1.70	600	1.86	1.25	0.12	M256	1500
2MBI800VG-120P	1200	± 20	800	5170	1.70	800	1.97	1.33	0.15	M256	1500
2MBI1200VG-120P	1200	± 20	1200	6810	1.70	1200	2.55	1.67	0.16	M256	1500
2MBI600VG-170E	1700	± 20	600	4410	2.00	600	2.28	2.07	0.58	M256	1500
2MBI800VG-170E	1700	± 20	800	5760	2.00	800	2.41	2.13	0.55	M256	1500
2MBI1200VG-170E	1700	± 20	1200	7500	2.00	1200	2.76	2.29	0.33	M256	1500
2MBI600VT-170E	1700	± 20	600	4280	2.00	600	1.51	2.07	0.58	M278	900
2MBI800VT-170E	1700	± 20	800	5370	2.00	800	2.00	2.13	0.55	M278	900
2MBI1200VT-170E	1700	± 20	1200	7040	2.00	1200	2.14	2.29	0.33	M278	900

Note: M256: Cu-baseplate M278: AlSiC-baseplate

$V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip Switching time: at $T_{vj}=125^\circ C$

IGBT Module 2-Pack < X series / V series >

PrimePACK™ 1200V class

	I_c	1200V		
		X series	V series	
			Low switching loss	Soft turn off
 M271 	600A		2MBI600VXA-120E-50	
			2MBI600VXA-120E-80	
			2MBI600VXA-120E-54	
	900A	2MBI900XXA120P-50	2MBI900VXA-120E-50	2MBI900VXA-120P-50
			2MBI900VXA-120E-80	2MBI900VXA-120P-80
			2MBI900VXA-120E-54	2MBI900VXA-120P-54
 M272 	1400A	2MBI1400XXB120P-50	2MBI1400VXB-120E-50	2MBI1400VXB-120P-50
			2MBI1400VXB-120E-80	2MBI1400VXB-120P-80
			2MBI1400VXB-120E-54	2MBI1400VXB-120P-54
	1800A	2MBI1800XXF120P-50		
 M291 	2400A	2MBI2400XRXC120-50		

Dimension [mm]

X series

Device type	V_{CES}	V_{GES}	I_c Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_c	$t_{d(on)}$	$t_{d(off)}$	t_f		
	Volts	Volts	Amps.	Watts	Volts	Amps.	μ sec.	μ sec.	μ sec.		Grams
○ 2MBI900XXA120P-50	1200	±20	900	TBD	TBD	900	TBD	TBD	TBD	M271	850
● 2MBI1200XXE120P-50	1200	±20	1200	7100	1.45	1200	1.10	0.90	0.16	M271	850
● 2MBI1400XXB120P-50	1200	±20	1400	5400	1.45	1400	1.10	0.90	0.16	M272	1250
● 2MBI1800XXF120P-50	1200	±20	1800	10700	1.45	1800	1.10	0.90	0.16	M272	1250
○ 2MBI2400XRXC120-50	1200	±20	2400	21100	1.50	2400	1.14	0.99	0.13	M291	1350

V series

Device type	V_{CES}	V_{GES}	I_c Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_c	t_{on}	t_{off}	t_f		
	Volts	Volts	Amps.	Watts	Volts	Amps.	μ sec.	μ sec.	μ sec.		Grams
2MBI600VXA-120E-50	1200	±20	600	3350	1.75	600	1.00	1.20	0.15	M271	850
2MBI600VXA-120E-80	1200	±20	600	3350	1.75	600	1.00	1.20	0.15	M271	850
2MBI600VXA-120E-54	1200	±20	600	3350	1.75	600	1.00	1.20	0.15	M271	850
2MBI900VXA-120E-50	1200	±20	900	5100	1.75	900	1.00	1.20	0.15	M271	850
2MBI900VXA-120E-80	1200	±20	900	5100	1.75	900	1.00	1.20	0.15	M271	850
2MBI900VXA-120E-54	1200	±20	900	5100	1.75	900	1.00	1.20	0.15	M271	850
2MBI1400VXB-120E-50	1200	±20	1400	7650	1.75	1400	1.00	1.20	0.15	M272	1250
2MBI1400VXB-120E-80	1200	±20	1400	7650	1.75	1400	1.00	1.20	0.15	M272	1250
2MBI1400VXB-120E-54	1200	±20	1400	7650	1.75	1400	1.00	1.20	0.15	M272	1250
2MBI900VXA-120P-50	1200	±20	900	5100	1.65	900	1.00	1.20	0.15	M271	850
2MBI900VXA-120P-80	1200	±20	900	5100	1.65	900	1.00	1.20	0.15	M271	850
2MBI900VXA-120P-54	1200	±20	900	5100	1.65	900	1.00	1.20	0.15	M271	850
2MBI1400VXB-120P-50	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
2MBI1400VXB-120P-80	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
2MBI1400VXB-120P-54	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250

Note 1: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

Note 2: The products with suffix '-54' on this page are labeled to specify the rank of $V_{CE(sat)}$ and V_f .

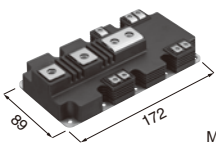
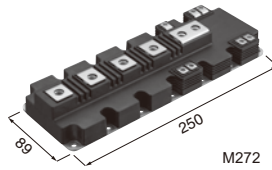
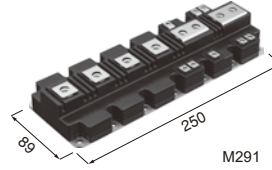
Note 3: "-80": Pre-Applied Thermal-Interface-Material for "-54"

● : New products ○ : Under development

 $V_{CE(sat)}$: at $T_J=25^\circ\text{C}$, Chip

IGBT Module 2-Pack < X series / V series >

■ PrimePACK™ 1700V class

	I _C	1700V		
		X series	V series	
		Low switching loss	Low switching loss	Soft turn off
 M271	650A	2MBI650XXA170-50	2MBI650VXA-170E-50	
			2MBI650VXA-170E-80	
			2MBI650VXA-170E-54	
			2MBI650VXA-170EA-50	
			2MBI650VXA-170EA-80	
			2MBI650VXA-170EA-54	
	1200A	2MBI1200XXE170-50		
 M272	1000A	2MBI1000XXB170-50	2MBI1000VXB-170E-50	
			2MBI1000VXB-170E-80	
			2MBI1000VXB-170E-54	
			2MBI1000VXB-170EA-50	
			2MBI1000VXB-170EA-80	
			2MBI1000VXB-170EA-54	
	1400A	2MBI1400XXB170-50	2MBI1400VXB-170E-50	2MBI1400VXB-170P-50
 M291			2MBI1400VXB-170E-80	2MBI1400VXB-170P-80
			2MBI1400VXB-170E-54	2MBI1400VXB-170P-54
	1800A	2MBI1800XXF170-50		
	1800A	2MBI1800XXG170-50		

Dimension [mm]

■ X series

Device type	V _{CES}	V _{GES}	I _C	P _{tot}	V _{CE(sat)} (V _{GE} =15V)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	typ.	I _C	t _{d(on)}	t _{d(off)}	t _f		
			Cont.			Amps.	typ.	typ.	typ.		Grams
○ 2MBI650XXA170-50	1700	±20	650	TBD	TBD	650	TBD	TBD	TBD	M271	850
○ 2MBI1200XXE170-50	1700	±20	1200	8600	1.70	1200	1.11	1.02	0.20	M271	850
● 2MBI1000XXB170-50	1700	±20	1000	3700	1.65	1000	1.23	0.95	0.38	M272	1250
● 2MBI1400XXB170-50	1700	±20	1400	6900	1.65	1400	1.11	1.02	0.20	M272	1250
● 2MBI1800XXF170-50	1700	±20	1800	13000	1.70	1800	1.11	1.02	0.20	M272	1250
● 2MBI1800XXG170-50	1700	±20	1800	13000	1.70	1800	1.11	1.02	0.20	M291	1350

Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

V_{CE(sat)}: at T_{vj}=25°C, Chip

● : New products ○ : Under development

■ V series

Device type	V_{CES}	V_{GES}	I_C Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_C	t_{on} typ.	t_{off} typ.	t_f typ.		
	Volts	Volts	Amps.	Watts	Volts	Amps.	μ sec.	μ sec.	μ sec.		Grams
2MBI650VXA-170E-50	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
2MBI650VXA-170E-80	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
2MBI650VXA-170E-54	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
2MBI650VXA-170EA-50	1700	± 20	650	4150	2.00	650	1.70	1.60	0.11	M271	850
2MBI650VXA-170EA-80	1700	± 20	650	4150	2.00	650	1.70	1.60	0.11	M271	850
2MBI650VXA-170EA-54	1700	± 20	650	4150	2.00	650	1.70	1.60	0.11	M271	850
2MBI1000VXB-170E-50	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
2MBI1000VXB-170E-80	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
2MBI1000VXB-170E-54	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
2MBI1000VXB-170EA-50	1700	± 20	1000	6250	2.00	1000	1.70	1.60	0.11	M272	1250
2MBI1000VXB-170EA-80	1700	± 20	1000	6250	2.00	1000	1.70	1.60	0.11	M272	1250
2MBI1000VXB-170EA-54	1700	± 20	1000	6250	2.00	1000	1.70	1.60	0.11	M272	1250
2MBI1400VXB-170E-50	1700	± 20	1400	8820	2.15	1400	1.25	1.55	0.15	M272	1250
2MBI1400VXB-170E-80	1700	± 20	1400	8820	2.15	1400	1.25	1.55	0.15	M272	1250
2MBI1400VXB-170E-54	1700	± 20	1400	8820	2.15	1400	1.25	1.55	0.15	M272	1250
2MBI1400VXB-170P-50	1700	± 20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250
2MBI1400VXB-170P-80	1700	± 20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250
2MBI1400VXB-170P-54	1700	± 20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250

Note 1: The products with suffix '-54' on this page are labeled to specify the rank of $V_{CE(sat)}$ and V_f .

Note 2: The products with 'EA' on this page have optimized FWD for the application causing heavy load through FWD.

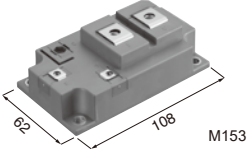
The optimized FWD reduces V_f and thermal resistance.

Note 3: "-80": Pre-Applied Thermal-Interface-Material for "-54"

$V_{CE(sat)}$: at $T_{vj}=25^\circ\text{C}$, Chip

IGBT Module 1-Pack < V series >

■ Standard 1-Pack 1200V, 1700V class

		I_C	1200V		1700V
			V series	V series With AlN substrate	V series
		300A			1MBI300V-170-50
		400A	1MBI400V-120-50	1MBI400VF-120-50	1MBI400V-170-50
		600A	1MBI600V-120-50	1MBI600VF-120-50	1MBI600V-170-50
		900A	1MBI900V-120-50		

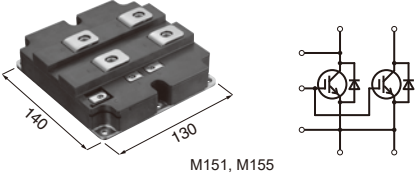
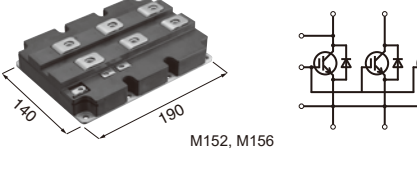
Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_C	t_{on} typ.	t_{off} typ.	t_f typ.		
	Volts	Volts	Amps.	Watts	Volts	Amps.	μ sec.	μ sec.	μ sec.		Grams
1MBI400V-120-50	1200	± 20	400	2410	1.75	400	0.60	1.10	0.14	M153	380
1MBI600V-120-50	1200	± 20	600	3000	1.75	600	0.70	0.90	0.10	M153	380
1MBI900V-120-50	1200	± 20	900	4280	1.90	900	0.70	0.85	0.10	M153	380
1MBI400VF-120-50	1200	± 20	400	3330	1.75	400	0.60	1.10	0.14	M153	380
1MBI600VF-120-50	1200	± 20	600	4680	1.75	600	0.70	0.90	0.10	M153	380
1MBI300V-170-50	1700	± 20	300	1705	2.00	300	0.70	0.80	0.14	M153	380
1MBI400V-170-50	1700	± 20	400	2500	2.00	400	0.70	0.80	0.14	M153	380
1MBI600V-170-50	1700	± 20	600	3610	2.00	600	0.70	0.80	0.14	M153	380

$V_{CE(sat)}$: at $T_{vj}=25^\circ\text{C}$, Chip

IGBT Module 1-Pack < V series / U series >

■ High Power Module 1200V, 1700V, 3300V class

	I_C	1200V	1700V		3300V
		V series	V series		U series
		Cu-baseplate	Cu-baseplate	AlSiC-baseplate	AlSiC-baseplate
 M151, M155	800A				1MBI800UG-330
	1000A				1MBI1000UG-330
					1MBI1000UG-330B
	1200A	1MBI1200VC-120P	1MBI1200VC-170E	1MBI1200VR-170E	
	1600A	1MBI1600VC-120P	1MBI1600VC-170E	1MBI1600VR-170E	
 M152, M156	2400A	1MBI2400VC-120P	1MBI2400VC-170E	1MBI2400VR-170E	
	1200A				1MBI1200UE-330
	1500A				1MBI1500UE-330
					1MBI1500UE-330B
	2400A	1MBI2400VD-120P	1MBI2400VD-170E	1MBI2400VS-170E	
	3600A	1MBI3600VD-120P	1MBI3600VD-170E	1MBI3600VS-170E	

Dimension [mm]

Device type	V_{CES} Volts	V_{GES} Volts	I_C Cont. Amps.	P_{tot} Watts	$V_{CE(sat)}$ ($V_{GE}=15V$) typ.		Switching time			Package	Net mass Grams
					typ.	I_C Amps.	t_{on} typ. $\mu sec.$	t_{off} typ. $\mu sec.$	t_f typ. $\mu sec.$		
1MBI1200VC-120P	1200	± 20	1200	7890	1.70	1200	1.73	1.52	0.15	M151	1500
1MBI1600VC-120P	1200	± 20	1600	10340	1.70	1600	2.22	1.47	0.19	M151	1500
1MBI2400VC-120P	1200	± 20	2400	13630	1.70	2400	3.15	1.93	0.24	M151	1500
1MBI2400VD-120P	1200	± 20	2400	15780	1.70	2400	2.38	1.64	0.21	M152	2300
1MBI3600VD-120P	1200	± 20	3600	20540	1.70	3600	2.98	2.15	0.27	M152	2300
1MBI1200VC-170E	1700	± 20	1200	8820	2.00	1200	2.18	2.20	0.45	M151	1500
1MBI1600VC-170E	1700	± 20	1600	11700	2.00	1600	2.28	2.17	0.40	M151	1500
1MBI2400VC-170E	1700	± 20	2400	15000	2.00	2400	2.63	2.41	0.38	M151	1500
1MBI2400VD-170E	1700	± 20	2400	17640	2.00	2400	2.30	2.22	0.43	M152	2300
1MBI3600VD-170E	1700	± 20	3600	22380	2.00	3600	2.27	2.67	0.31	M152	2300
1MBI1200VR-170E	1700	± 20	1200	8570	2.00	1200	1.51	2.20	0.45	M155	900
1MBI1600VR-170E	1700	± 20	1600	10710	2.00	1600	1.83	2.17	0.40	M155	900
1MBI2400VR-170E	1700	± 20	2400	14010	2.00	2400	2.51	2.41	0.38	M155	900
1MBI2400VS-170E	1700	± 20	2400	16120	2.00	2400	2.09	2.22	0.43	M156	1300
1MBI3600VS-170E	1700	± 20	3600	21120	2.00	3600	2.70	2.66	0.32	M156	1300
1MBI800UG-330	3300	± 20	800	9600	2.28	800	3.40	2.40	0.40	M155	900
1MBI1000UG-330	3300	± 20	1000	10400	2.46	1000	2.50	2.00	0.50	M155	900
1MBI1000UG-330B	3300	± 20	1000	10400	2.75	1000	3.10	2.35	0.45	M155	900
1MBI1200UE-330	3300	± 20	1200	14700	2.28	1200	3.40	2.40	0.40	M156	1300
1MBI1500UE-330	3300	± 20	1500	15600	2.46	1500	3.10	2.60	0.50	M156	1300
1MBI1500UE-330B	3300	± 20	1500	15600	2.75	1500	3.10	2.35	0.45	M156	1300

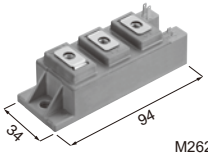
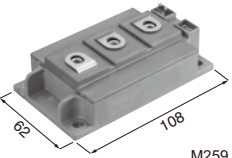
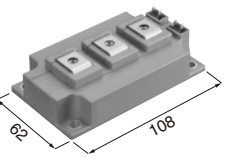
Note1: M151, M152: Cu-baseplate M155, M156: AlSiC-baseplate

 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, ChipSwitching time: at $T_{vj}=125^\circ C$, at $T_{vj}=150^\circ C$ (3300V-1000A, 1500A only)

Note2: -330B type: Low switching losses

IGBT Module Chopper < V series / U series >

■ Chopper 600V, 1200V class

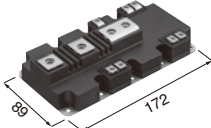
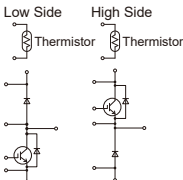
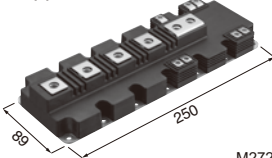
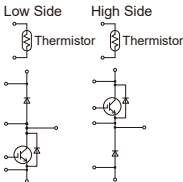
	I_C	600V		1200V	
		U series	V series	U series	V series
 M262	50A			1MBI50U4F-120L-50	
	75A			1MBI75U4F-120L-50	
	100A			1MBI100U4F-120L-50	
	150A				1MBI150VA-120L-50
	200A				1MBI200VA-120L-50
	200A			1MBI200U4H-120L-50	
 M259	300A	1MBI300U2H-060L-50			
 M283	400A		1MBI400VH-060L-50		

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps. Cont.	Watts	typ.	I_C	t_{on}	t_{off}	t_f		
					Volts	Amps.	typ. $\mu sec.$	typ. $\mu sec.$	typ. $\mu sec.$		Grams
1MBI300U2H-060L-50	600	± 20	300	1000	2.45	300	0.40	0.48	0.07	M259	360
1MBI400VH-060L-50	600	± 20	400	1250	1.60	400	0.73	0.61	0.07	M283	370
1MBI50U4F-120L-50	1200	± 20	50	400	2.15	50	0.32	0.41	0.07	M262	180
1MBI75U4F-120L-50	1200	± 20	75	400	2.20	75	0.32	0.41	0.07	M262	180
1MBI100U4F-120L-50	1200	± 20	100	540	2.20	100	0.32	0.41	0.07	M262	180
1MBI200U4H-120L-50	1200	± 20	200	1040	2.25	200	0.32	0.41	0.07	M259	360
1MBI150VA-120L-50	1200	± 20	150	785	1.85	150	0.60	0.60	0.04	M262	180
1MBI200VA-120L-50	1200	± 20	200	880	1.80	200	0.60	0.60	0.04	M262	180

 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip

IGBT Module Chopper < V series >

■ PrimePACK™ 1200V, 1700V class

Chopper	 M271		I_C	1200V		1700V	
				V series		V series	
				Low side configuration	High side configuration	Low side configuration	High side configuration
Chopper	 M272		650A			1MBI650VXA-170EL-50	1MBI650VXA-170EH-50
						1MBI650VXA-170EL-80	1MBI650VXA-170EH-80
						1MBI650VXA-170EL-54	1MBI650VXA-170EH-54
			1000A			1MBI1000VXB-170EL-50	1MBI1000VXB-170EH-50
						1MBI1000VXB-170EL-80	1MBI1000VXB-170EH-80
						1MBI1000VXB-170EL-54	1MBI1000VXB-170EH-54
			1400A	1MBI1400VXB-120PL-54	1MBI1400VXB-120PH-54	1MBI1400VXB-170PL-50	1MBI1400VXB-170PH-50
				1MBI1400VXB-120PL-80	1MBI1400VXB-120PH-80	1MBI1400VXB-170PL-54	1MBI1400VXB-170PH-54

Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	typ.	I_C	t_{on}	t_{off}	t_f		
					Amps.	μ sec.	μ sec.	μ sec.			
1MBI1400VXB-120PL-54	1200	± 20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI1400VXB-120PL-80	1200	± 20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI1400VXB-120PH-54	1200	± 20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI1400VXB-120PH-80	1200	± 20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI650VXA-170EL-50	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EL-80	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EL-54	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI1000VXB-170EL-50	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EL-80	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EL-54	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1400VXB-170PL-50	1700	± 20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250
1MBI1400VXB-170PL-54	1700	± 20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250
1MBI650VXA-170EH-50	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EH-80	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EH-54	1700	± 20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI1000VXB-170EH-50	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EH-80	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EH-54	1700	± 20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1400VXB-170PH-50	1700	± 20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250
1MBI1400VXB-170PH-54	1700	± 20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250

Note1: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

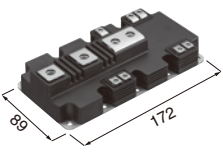
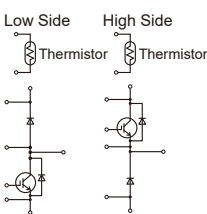
Note2: The products with suffix '-54' on this page are labeled to specify the rank of $V_{CE(sat)}$ and V_F .

Note3: "-80": Pre-Applied Thermal-Interface-Material for "-54"

 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip

IGBT Module Chopper < V series >

■ PrimePACK™ 1200V class

Chopper		1200V		
		V series		
		Boost (Low side) Chopper	Buck (High side) Chopper	
 M271		900A	1MBI900VXA-120PD-50	1MBI900VXA-120PC-50
			1MBI900VXA-120PD-54	1MBI900VXA-120PC-54
			1MBI900VXA-120PD-80	1MBI900VXA-120PC-80

Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C Cont.	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
					typ.	I_C	t_{on} typ.	t_{off} typ.	t_f typ.		
	Volts	Volts	Amps.	Watts	Volts	Amps.	$\mu sec.$	$\mu sec.$	$\mu sec.$		Grams
1MBI900VXA-120PC-50	1200	± 20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PC-54	1200	± 20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PC-80	1200	± 20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PD-50	1200	± 20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PD-54	1200	± 20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PD-80	1200	± 20	900	5100	1.65	900	1.10	1.20	0.15	M271	850

Note1: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

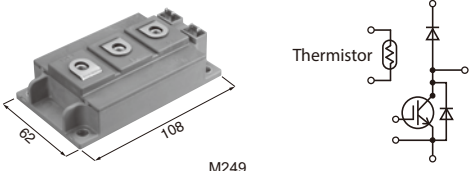
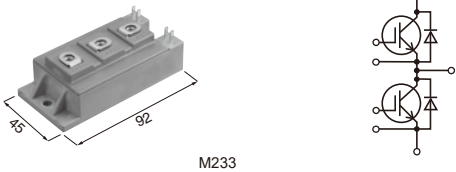
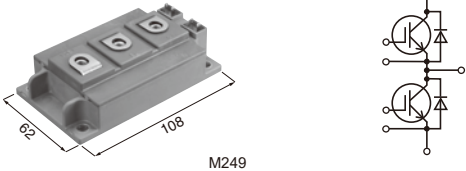
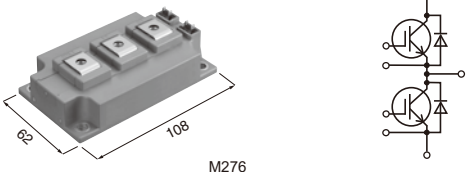
 $V_{CE(sat)}$: at $T_{vj}=25^\circ C$, ChipNote2: The products with suffix '-54' on this page are labeled to specify the rank of $V_{CE(sat)}$ and V_f .

Note3: Antiparallel diode current rating is 120A. Application circuit is Boost/Buck chopper only.

Note4: "-80": Pre-Applied Thermal-Interface-Material for "-54"

IGBT Module High Speed

High Speed 1200V class

Chopper		I_C	1200V
			High Speed IGBT
		200A	1MBI200HH-120L-50
		300A	1MBI300HH-120L-50
		400A	1MBI400HH-120L-50
2-pack		100A	2MBI100HB-120-50
2-pack		150A	2MBI150HH-120-50
		200A	2MBI200HH-120-50
2-pack		100A	2MBI100HJ-120-50
		150A	2MBI150HJ-120-50
		200A	2MBI200HJ-120-50
		300A	2MBI300HJ-120-50

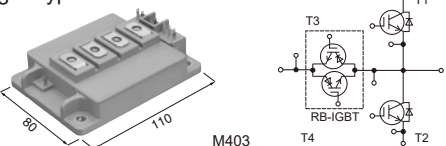
Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps. Cont.	Watts	typ.	I_C	t_{on}	t_{off}	t_f		
					Volts	Amps.	typ. $\mu sec.$	typ. $\mu sec.$	typ. $\mu sec.$		Grams
1MBI200HH-120L-50	1200	± 20	200	1390	3.10	200	0.2	0.3	0.05	M249	370
1MBI300HH-120L-50	1200	± 20	300	2090	3.20	300	0.2	0.3	0.05	M249	370
1MBI400HH-120L-50	1200	± 20	400	2500	3.10	400	0.2	0.4	0.05	M249	370
2MBI100HB-120-50	1200	± 20	100	1040	3.10	100	-	0.30	0.05	M233	240
2MBI150HH-120-50	1200	± 20	150	1390	3.20	150	-	0.30	0.05	M249	370
2MBI200HH-120-50	1200	± 20	200	1790	3.10	200	-	0.30	0.05	M249	370
2MBI100HJ-120-50	1200	± 20	100	655	3.20	100	0.25	0.30	0.05	M276	370
2MBI150HJ-120-50	1200	± 20	150	925	3.20	150	0.25	0.30	0.05	M276	370
2MBI200HJ-120-50	1200	± 20	200	1385	3.20	200	0.25	0.30	0.05	M276	370
2MBI300HJ-120-50	1200	± 20	300	1950	3.20	300	0.25	0.30	0.05	M276	370

$V_{CE(sat)}$: at $T_{vj}=25^\circ C$, Chip

IGBT Module 3-level < V series >

T type NPC 3-level Circuits 600V, 1200V, 1700V class

1-leg T-Type 	T1, T2		600V	1200V		1700V
	T3, T4		600V	600V	900V	1200V
	220A					4MBI220VF-170R2-50
	300A			4MBI300VG-120R-50	4MBI300VG-120R1-50	
	340A			4MBI340VF-120R-50		
400A		4MBI400VG-060R-50	4MBI400VF-120R-50 *			

Dimension [mm]

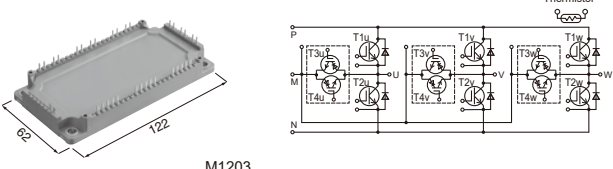
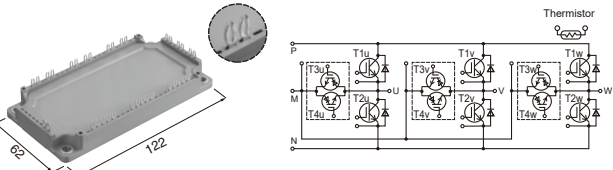
Device type	T1, T2					T3, T4					Package	Net mass
	V_{CES}	I_C	P_{tot}	$V_{CE(sat)} (V_{GE}=15V)$		V_{CES}	I_C	P_{tot}	$V_{CE(sat)} (V_{GE}=15V)$			
	Volts	Amps.	Watts	typ.	I_C	Volts	Amps.	Watts	typ.	I_C		
				Volts	Amps.	Volts	Amps.	Watts	Volts	Amps.		Grams
4MBI400VG-060R-50	600	400	1135	1.60	400	600	400	1560	2.45	400	M403	460
4MBI300VG-120R-50	1200	300	1250	1.85	300	600	300	1250	2.45	300	M403	460
4MBI300VG-120R1-50	1200	300	1500	1.85	300	900	300	1550	2.30	300	M403	460
4MBI340VF-120R-50	1200	340	1500	1.85	300	600	340	1500	2.45	300	M403	460
4MBI400VF-120R-50 *1	1200	400	1835	2.00	400	600	450	2230	2.45	400	M403	460
4MBI220VF-170R2-50	1700	220	1500	2.00	200	1200	220	1865	2.70	200	M403	460

Note : VF type is lower thermal impedance version.

$V_{CE(sat)}$: at $T_{vj}=25^{\circ}C$, Chip

*1 Particular for Inverter

T type NPC 3-level Circuits 1200V class

3-leg Solder pins 	T1, T2		1200V	
	T3, T4		600V	
	50A		12MBI50VN-120-50	
	75A		12MBI75VN-120-50	
	100A		12MBI100VN-120-50	
3-leg Press fit pins 	50A		12MBI50VX-120-50	
	75A		12MBI75VX-120-50	
	100A		12MBI100VX-120-50	

Dimension [mm]

Device type	T1, T2					T3, T4					Package	Net mass
	V_{CES}	I_C	P_{tot}	$V_{CE(sat)} (V_{GE}=15V)$		V_{CES}	I_C	P_{tot}	$V_{CE(sat)} (V_{GE}=15V)$			
	Volts	Amps.	Watts	typ.	I_C	Volts	Amps.	Watts	typ.	I_C		
				Volts	Amps.	Volts	Amps.	Watts	Volts	Amps.		Grams
12MBI50VN-120-50	1200	50	230	1.85	50	600	50	235	2.45	50	M1203	302
12MBI75VN-120-50	1200	75	320	1.85	75	600	75	305	2.45	75	M1203	302
12MBI100VN-120-50	1200	100	430	1.75	100	600	100	400	2.45	100	M1203	302
12MBI50VX-120-50	1200	50	230	1.85	50	600	50	235	2.45	50	M1202	302
12MBI75VX-120-50	1200	75	320	1.85	75	600	75	305	2.45	75	M1202	302
12MBI100VX-120-50	1200	100	430	1.75	100	600	100	400	2.45	100	M1202	302

$V_{CE(sat)}$: at $T_{vj}=25^{\circ}C$, Chip

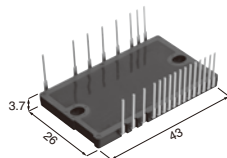
IGBT Module IPM < X series >

■ Small IPM (Intelligent Power Module) 600, 650V class

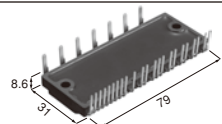
Built-in protection functions

- P-side fault status output (Alarm)
- N-side fault status output (Alarm)
- Under voltage protection (self shutdown)
- Over current protection (External current detection and shutdown)
- Overheating protection (self shutdown)
- Temperature sensor output (Vtemp, out)

Small IPM with High Voltage Driver-IC
without Brake-Chopper



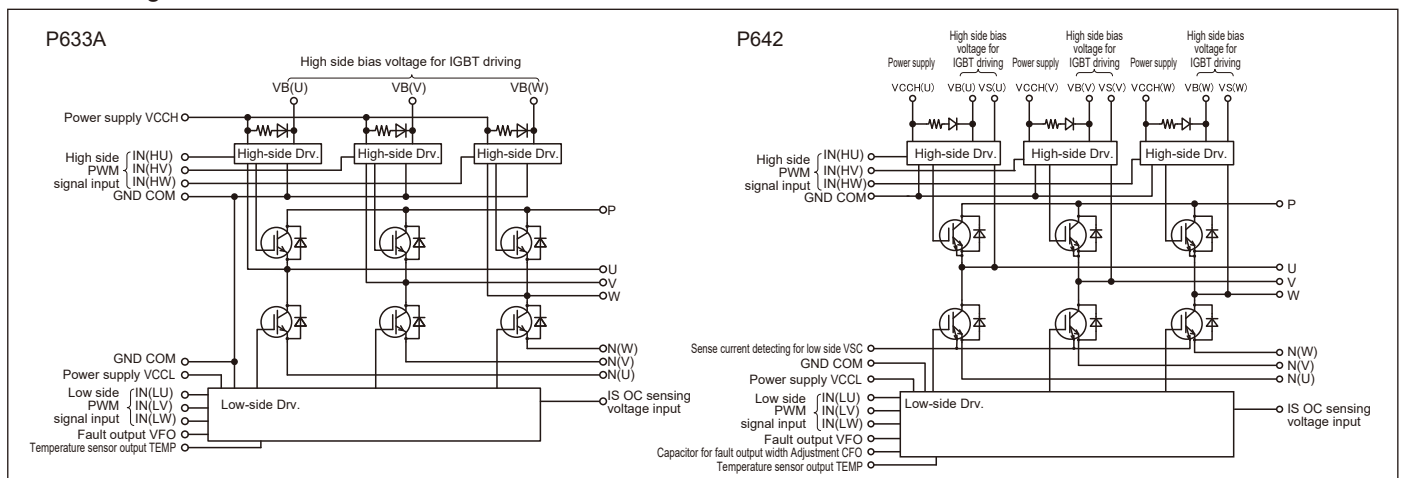
P633A



P642

Dimension [mm]

● Block Diagram



Device type	Inverter			Control					Protection function				Package Net mass	
	V _{CEs}	I _c	V _{CE(sat)}	V _{CCl}	Boot-strap	Input signal	Active logic	Diode level	UV	OC	V _{temp}	TOH		
	Volts	Amps.	Volts	V _{CCl}	V _B	typ.			V _{CCl}	*1	*2	*2	V _F O fault output	Grams
6MBP15XSD060-50	600	15	1.60	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	-	N-side(UV,OC)	P633A 9.3
6MBP20XSD060-50	600	20	1.60	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	-	N-side(UV,OC)	P633A 9.3
6MBP30XSD060-50	600	30	1.60	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	-	N-side(UV,OC)	P633A 9.3
6MBP35XSD060-50	600	35	1.40	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	-	N-side(UV,OC)	P633A 9.3
6MBP15XSF060-50	600	15	1.60	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	N-side(143±7°C)	N-side(UV,OC,TOH)	P633A 9.3
6MBP20XSF060-50	600	20	1.60	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	N-side(143±7°C)	N-side(UV,OC,TOH)	P633A 9.3
6MBP30XSF060-50	600	30	1.60	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	N-side(143±7°C)	N-side(UV,OC,TOH)	P633A 9.3
6MBP35XSF060-50	600	35	1.40	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	N-side(143±7°C)	N-side(UV,OC,TOH)	P633A 9.3
● 6MBP50XTA065-50	650	50	1.30	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	-	N-side(UV,OC)	P642 37
● 6MBP75XTA065-50	650	75	1.35	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	-	N-side(UV,OC)	P642 37
● 6MBP50XTC065-50	650	50	1.30	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	N-side(143±7°C)	N-side(UV,OC,TOH)	P642 37
● 6MBP75XTC065-50	650	75	1.35	15	Built-in	High(3.3/5V)			P&N-side	N-side	N-side	N-side(143±7°C)	N-side(UV,OC,TOH)	P642 37

*1 External current detection

*2 Temperature detection in LVIC

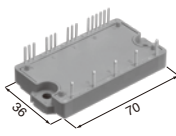
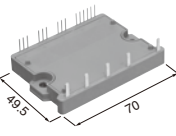
● : New products

IGBT Module IPM < X series / V series >

■ IPM (Intelligent Power Module) 600V, 650V class

Built-in protection functions

P-side fault status output (Alarm)
 N-side fault status output (Alarm)
 Under voltage protection (self shutdown)
 Over current protection (self shutdown)
 Overheating protection (self shutdown)

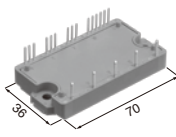
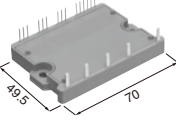
					I _c	650V		600V	
						X series		V series	
						Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
 P639	✓	✓	✓	✓	20A	6MBP20XRHA065-50			
					30A	6MBP30XRHA065-50			
 P629	✓	✓	✓	✓	20A			6MBP20VAA060-50	
					30A			6MBP30VAA060-50	
					50A	6MBP50XAA065-50		6MBP50VAA060-50	
					75A	6MBP75XAA065-50			

Dimension [mm]

■ IPM (Intelligent Power Module) 1200V class

Built-in protection functions

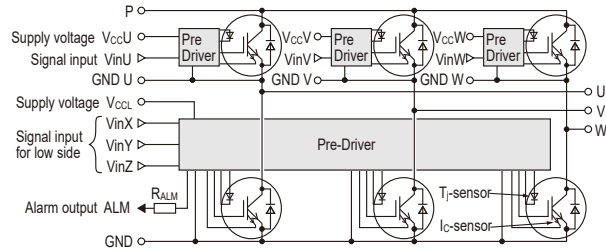
P-side fault status output (Alarm)
 N-side fault status output (Alarm)
 Under voltage protection (self shutdown)
 Over current protection (self shutdown)
 Overheating protection (self shutdown)

					I _c	1200V			
						X series		V series	
						Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
 P639	✓	✓	✓	✓	10A	6MBP10XRHA120-50			
 P629	✓	✓	✓	✓	10A			6MBP10VAA120-50	
					15A			6MBP15VAA120-50	
					25A	6MBP25XAA120-50		6MBP25VAA120-50	
					35A	6MBP35XAA120-50			

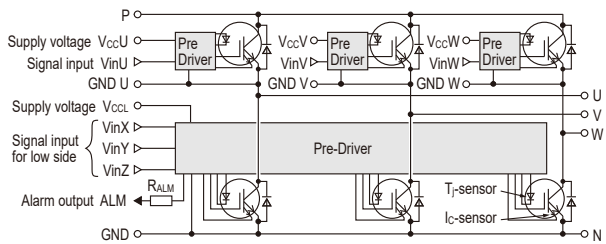
Dimension [mm]

Block Diagram

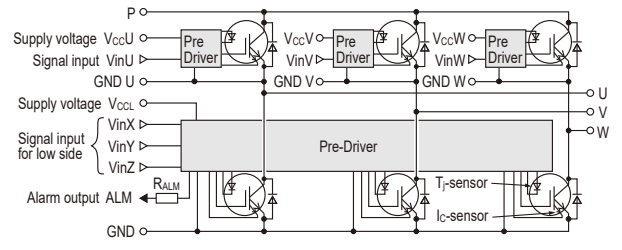
• 6MBP□XRHA□-50



• 6MBP□VAA□-50



• 6MBP□XAA□-50



X series

Device type	Inverter			Brake		Control							Package			Net mass
	V _{CES}	I _C	V _{CE(sat)}	V _{CES}	I _C	V _{CC}	I _{OC} [INV]	V _{UV}	T _{JW}	T _{JOH}	Alarm signal hold time					
	Volts	Amps.	Volts	Volts	Amps.	typ.	min.	max.	min.	min.	OC typ.	UV typ.	T _{JOH} typ.			
						(V)	(A)	(V)	(°C)	(°C)	ms	ms	ms		Grams	
● 6MBP20XRHA065-50	650	20	1.4	-	-	15	30	12.5	-	175	2	4	8	P639	55	
● 6MBP30XRHA065-50	650	30	1.4	-	-	15	45	12.5	-	175	2	4	8	P639	55	
● 6MBP50XAA065-50	650	50	1.15	-	-	15	75	12.5	-	175	2	4	8	P629	80	
● 6MBP75XAA065-50	650	75	1.15	-	-	15	113	12.5	-	175	2	4	8	P629	80	
● 6MBP10XRHA120-50	1200	10	2.05	-	-	15	15	12.5	-	175	2	4	8	P639	55	
● 6MBP25XAA120-50	1200	25	1.45			15	38	12.5	-	175	2	4	8	P629	80	
● 6MBP35XAA120-50	1200	35	1.45	-	-	15	53	12.5	-	175	2	4	8	P629	80	

Note: T_{jw} is the warning temperature for IGBT chip overheating.

$V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

●: New products

V series

Device type	Inverter			Brake		Control							Package	Net mass Grams	
	V_{CES}	I_C	$V_{CE(sat)}$	V_{CES}	I_C	V_{CC}	$I_{OC[INV]}$	V_{UV}	T_{jw}	T_{jOH}	Alarm signal hold time				
	Volts	Amps.	Volts	Volts	Amps.	typ. (V)	min. (A)	max. (V)	min. (°C)	min. (°C)	OC typ. ms	UV typ. ms			T_{jOH} typ. ms
6MBP20VAA060-50	600	20	1.4	-	-	15	30	12.5	-	150	2	4	8	P629	80
6MBP30VAA060-50	600	30	1.4	-	-	15	45	12.5	-	150	2	4	8	P629	80
6MBP50VAA060-50	600	50	1.4	-	-	15	75	12.5	-	150	2	4	8	P629	80
6MBP10VAA120-50	1200	10	1.7	-	-	15	15	12.5	-	150	2	4	8	P629	80
6MBP15VAA120-50	1200	15	1.7	-	-	15	23	12.5	-	150	2	4	8	P629	80
6MBP25VAA120-50	1200	25	1.7	-	-	15	38	12.5	-	150	2	4	8	P629	80

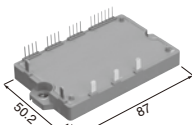
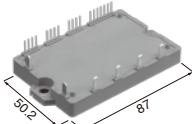
$V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module IPM < X series / V series >

■ IPM (Intelligent Power Module) 600V, 650V class

Built-in protection functions

P-side fault status output (Alarm)
 N-side fault status output (Alarm)
 Under voltage protection (self shutdown)
 Over current protection (self shutdown)
 Overheating protection (self shutdown)

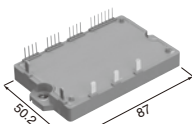
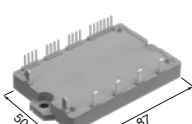
					I _c	650V		600V	
						X series		V series	
						Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
 P626	✓	✓	✓	✓	50A	6MBP50XBA065-50		6MBP50VBA060-50	
					75A	6MBP75XBA065-50		6MBP75VBA060-50	
					100A	6MBP100XBA065-50			
 P644	✓	✓	✓	✓	50A		7MBP50XJA065-50		
					75A		7MBP75XJA065-50		

Dimension [mm]

■ IPM (Intelligent Power Module) 1200V class

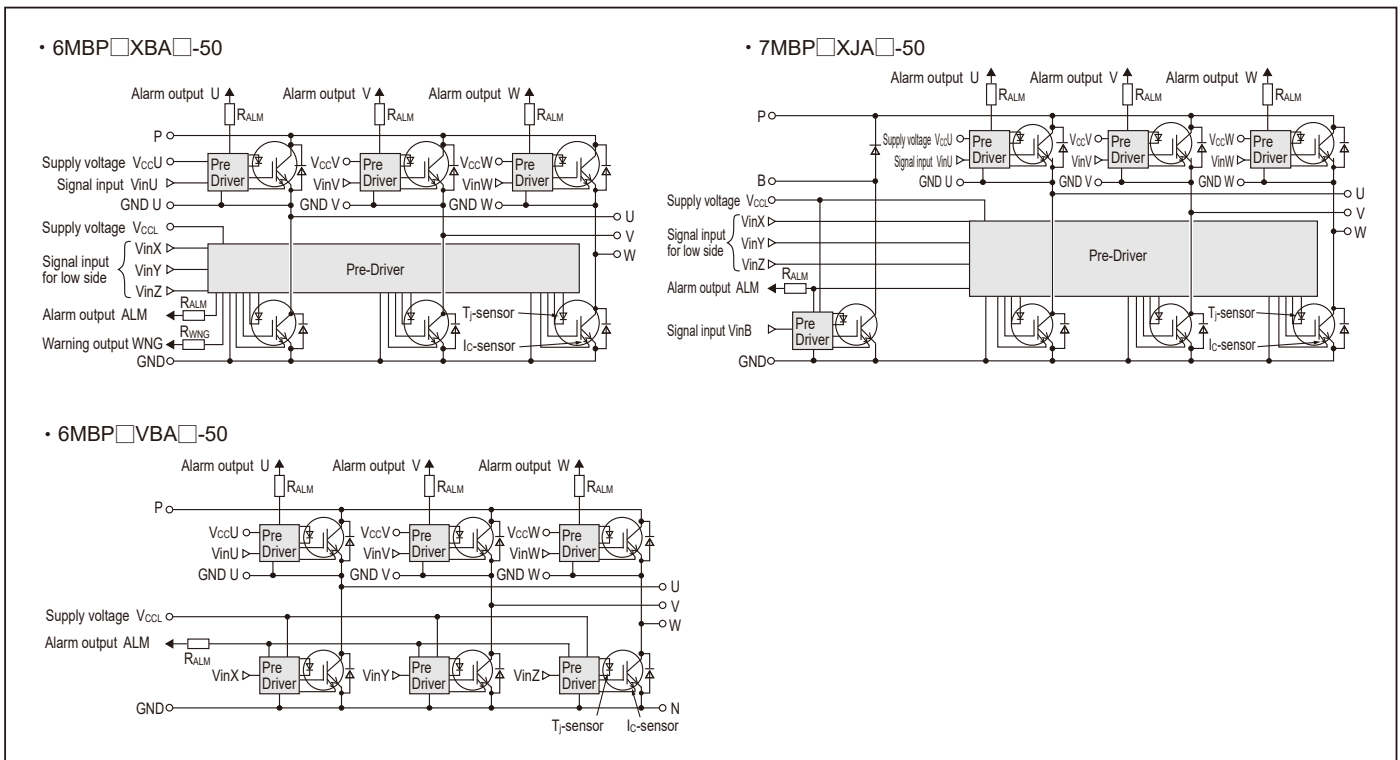
Built-in protection functions

P-side fault status output (Alarm)
 N-side fault status output (Alarm)
 Under voltage protection (self shutdown)
 Over current protection (self shutdown)
 Overheating protection (self shutdown)

					I _c	1200V			
						X series		V series	
						Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
 P626	✓	✓	✓	✓	25A	6MBP25XBA120-50		6MBP25VBA120-50	
					35A	6MBP35XBA120-50		6MBP35VBA120-50	
					50A	6MBP50XBA120-50		6MBP50VBA120-50	
 P644	✓	✓	✓	✓	25A		7MBP25XJA120-50		
					35A		7MBP35XJA120-50		

Dimension [mm]

● X series



■ X series

Device type	Inverter			Brake		Control							Alarm signal hold time			Package	Net mass
	V _{CES}	I _C	V _{CE(sat)}	V _{CES}	I _C	V _{CC}	I _{OC} [INV]	V _{UV}	T _{JW}	T _{JOH}	OC typ.	UV typ.	T _{JOH} typ.				
	Volts	Amps.	Volts	Volts	Amps.	(V)	(A)	(V)	(°C)	(°C)	ms	ms	ms				
● 6MBP50XBA065-50	650	50	1.15	-	-	15	75	12.5	150	175	2	4	8	P626	100		
● 6MBP75XBA065-50	650	75	1.15	-	-	15	113	12.5	150	175	2	4	8	P626	100		
● 6MBP100XBA065-50	650	100	1.15	-	-	15	150	12.5	150	175	2	4	8	P626	100		
○ 7MBP50XJA065-50	650	50	1.15	650	30	15	75	12.5	-	175	2	4	8	P644	100		
○ 7MBP75XJA065-50	650	75	1.15	650	50	15	113	12.5	-	175	2	4	8	P644	100		
● 6MBP25XBA120-50	1200	25	1.45	-	-	15	38	12.5	150	175	2	4	8	P626	100		
● 6MBP35XBA120-50	1200	35	1.45	-	-	15	53	12.5	150	175	2	4	8	P626	100		
● 6MBP50XBA120-50	1200	50	1.45	-	-	15	75	12.5	150	175	2	4	8	P626	100		
○ 7MBP25XJA120-50	1200	25	1.45	1200	15	15	38	12.5	-	175	2	4	8	P644	100		
○ 7MBP35XJA120-50	1200	35	1.45	1200	25	15	53	12.5	-	175	2	4	8	P644	100		

Note: T_{jw} is the warning temperature for IGBT chip overheating. $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

●: New products ○: Under development

■ V series

Device type	Inverter			Brake		Control							Package	Net mass	
	V_{CES}	I_C	$V_{CE(sat)}$	V_{CES}	I_C	V_{CC}	$I_{OC[INV]}$	V_{UV}	T_{jw}	T_{jOH}	Alarm signal hold time				
	Volts	Amps.	Volts	Volts	Amps.	typ.	min.	max.	min.	min.	OC typ.	UV typ.			T_{jOH} typ.
						(V)	(A)	(V)	(°C)	(°C)	ms	ms	ms		Grams
6MBP50VBA060-50	600	50	1.4	-	-	15	75	12.5	-	150	2	4	8	P626	100
6MBP75VBA060-50	600	75	1.4	-	-	15	113	12.5	-	150	2	4	8	P626	100
6MBP25VBA120-50	1200	25	1.7	-	-	15	38	12.5	-	150	2	4	8	P626	100
6MBP35VBA120-50	1200	35	1.7	-	-	15	53	12.5	-	150	2	4	8	P626	100
6MBP50VBA120-50	1200	50	1.7	-	-	15	75	12.5	-	150	2	4	8	P626	100

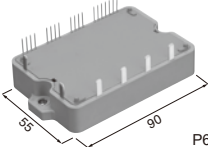
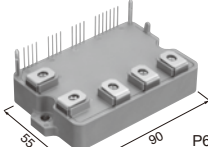
 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module IPM < X series / V series >

■ IPM (Intelligent Power Module) 600V, 650V class

Built-in protection functions

P-side fault status output (Alarm)
 N-side fault status output (Alarm)
 Under voltage protection (self shutdown)
 Over current protection (self shutdown)
 Overheating protection (self shutdown)

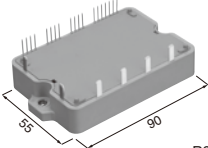
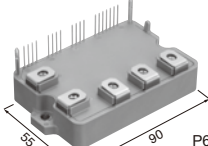
 P636						I _c	650V		600V	
							X series		V series	
							Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
 P638	✓	✓	✓	✓	✓	50A			6MBP50VFN060-50	7MBP50VFN060-50
						75A			6MBP75VFN060-50	7MBP75VFN060-50
						100A	6MBP100XFN065-50	7MBP100XFN065-50	6MBP100VFN060-50	7MBP100VFN060-50
	✓	✓	✓	✓	✓	50A	6MBP50XGA065-50			
						75A	6MBP75XGA065-50			
						100A	6MBP100XGN065-50			
						150A	6MBP150XGN065-50			

Dimension [mm]

■ IPM (Intelligent Power Module) 1200V class

Built-in protection functions

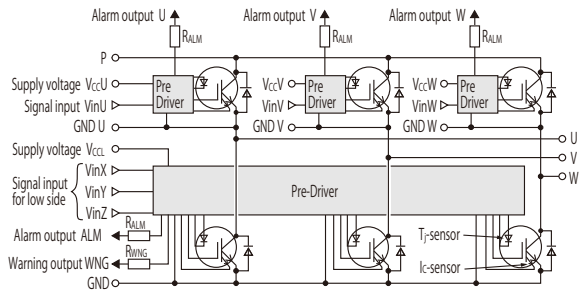
P-side fault status output (Alarm)
 N-side fault status output (Alarm)
 Under voltage protection (self shutdown)
 Over current protection (self shutdown)
 Overheating protection (self shutdown)

 P636						I _c	1200V			
							X series		V series	
							Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
 P638	✓	✓	✓	✓	✓	25A			6MBP25VFN120-50	7MBP25VFN120-50
						35A			6MBP35VFN120-50	7MBP35VFN120-50
						50A	6MBP50XFN120-50	7MBP50XFN120-50	6MBP50VFN120-50	7MBP50VFN120-50
	✓	✓	✓	✓	✓	25A	6MBP25XGA120-50			
						35A	6MBP35XGA120-50			
						50A	6MBP50XGN120-50			
						75A	6MBP75XGN120-50			

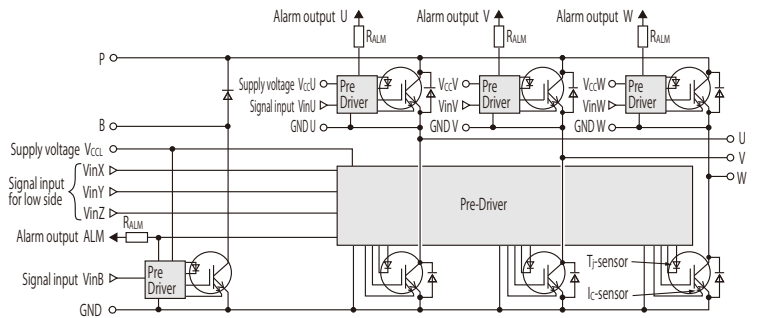
Dimension [mm]

Block Diagram

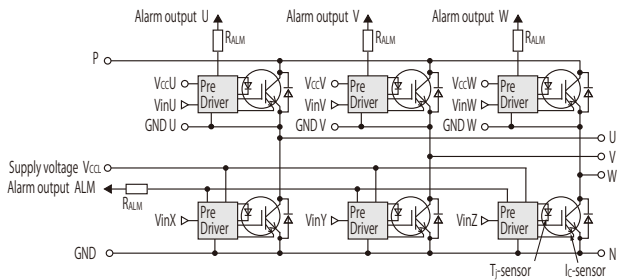
- 6MBP□XGA□-50
- 6MBP□XGN□-50
- 6MBP□XFN□-50



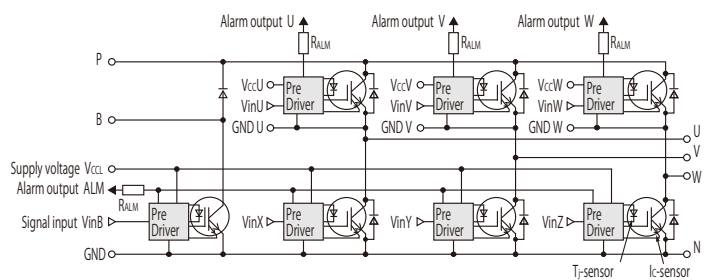
- 7MBP□XFN□-50



- 6MBP□VFN□-50



- 7MBP□VFN□-50



■ X series

Device type	Inverter			Brake		Control								Package	Net mass
	V_{CES}	I_C	$V_{CE(sat)}$	V_{CES}	I_C	V_{CC}	$I_{oc[INV]}$	V_{UV}	T_{jw}	T_{jOH}	Alarm signal hold time				
	Volts	Amps.	Volts	Volts	Amps.	typ. (V)	min. (A)	max. (V)	min. (°C)	min. (°C)	OC typ. ms	UV typ. ms	T_{jOH} typ. ms	Grams	
○ 6MBP100XFN065-50	650	100	1.15	-	-	15	150	12.5	150	175	2	4	8	P636	190
○ 7MBP100XFN065-50	650	100	1.15	650	50	15	150	12.5	-	175	2	4	8	P636	190
○ 6MBP50XGA065-50	650	50	1.15	-	-	15	75	12.5	150	175	2	4	8	P638	200
○ 6MBP75XGA065-50	650	75	1.15	-	-	15	113	12.5	150	175	2	4	8	P638	200
○ 6MBP100XGN065-50	650	100	1.15	-	-	15	150	12.5	150	175	2	4	8	P638	200
○ 6MBP150XGN065-50	650	150	1.15	-	-	15	225	12.5	150	175	2	4	8	P638	200
○ 6MBP50XFN120-50	1200	50	1.45	-	-	15	75	12.5	150	175	2	4	8	P636	190
○ 7MBP50XFN120-50	1200	50	1.45	1200	25	15	75	12.5	-	175	2	4	8	P636	190
○ 6MBP25XGA120-50	1200	25	1.45	-	-	15	38	12.5	150	175	2	4	8	P638	200
○ 6MBP35XGA120-50	1200	35	1.45	-	-	15	53	12.5	150	175	2	4	8	P638	200
○ 6MBP50XGN120-50	1200	50	1.45	-	-	15	75	12.5	150	175	2	4	8	P638	200
○ 6MBP75XGN120-50	1200	75	1.45	-	-	15	113	12.5	150	175	2	4	8	P638	200

Note: T_{jw} is the warning temperature for IGBT chip overheating.

○: Under development

 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

■ V series

Device type	Inverter			Brake		Control							Alarm signal hold time OC typ. UV typ. T _{JOH} typ.			Package	Net mass Grams
	V _{CES}	I _C Cont.	V _{CE(sat)} typ.	V _{CES}	I _C Cont.	V _{CC} typ.	I _{OC} [INV] min.	V _{UV} max.	T _{JW} min.	T _{JOH} min.							
	Volts	Amps.	Volts	Volts	Amps.	(V)	(A)	(V)	(°C)	(°C)	ms	ms	ms				
6MBP50VFN060-50	600	50	1.25	-	-	15	100	12.5	-	150	2	4	8	P636	190		
6MBP75VFN060-50	600	75	1.25	-	-	15	150	12.5	-	150	2	4	8	P636	190		
6MBP100VFN060-50	600	100	1.25	-	-	15	200	12.5	-	150	2	4	8	P636	190		
7MBP50VFN060-50	600	50	1.25	600	30	15	100	12.5	-	150	2	4	8	P636	190		
7MBP75VFN060-50	600	75	1.25	600	50	15	150	12.5	-	150	2	4	8	P636	190		
7MBP100VFN060-50	600	100	1.25	600	50	15	200	12.5	-	150	2	4	8	P636	190		
6MBP25VFN120-50	1200	25	1.7	-	-	15	50	12.5	-	150	2	4	8	P636	190		
6MBP35VFN120-50	1200	35	1.7	-	-	15	70	12.5	-	150	2	4	8	P636	190		
6MBP50VFN120-50	1200	50	1.7	-	-	15	100	12.5	-	150	2	4	8	P636	190		
7MBP25VFN120-50	1200	25	1.7	1200	15	15	50	12.5	-	150	2	4	8	P636	190		
7MBP35VFN120-50	1200	35	1.7	1200	25	15	70	12.5	-	150	2	4	8	P636	190		
7MBP50VFN120-50	1200	50	1.7	1200	25	15	100	12.5	-	150	2	4	8	P636	190		

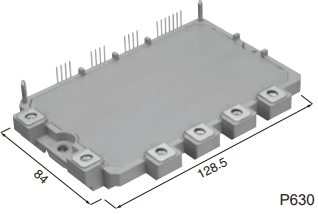
 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module IPM < X series / V series >

■ IPM (Intelligent Power Module) 600V, 650V class

Built-in protection functions

P-side fault status output (Alarm)
N-side fault status output (Alarm)
Under voltage protection (self shutdown)
Over current protection (self shutdown)
Overheating protection (self shutdown)

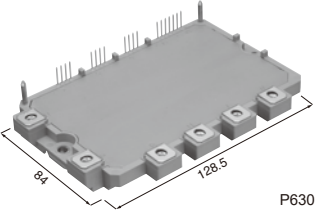
						650V		600V	
						X series		V series	
						Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
	✓	✓	✓	✓	✓	I _c			
						50A		6MBP50VDA060-50	7MBP50VDA060-50
						75A		6MBP75VDA060-50	7MBP75VDA060-50
						100A	6MBP100XDA065-50	7MBP100XDA065-50	6MBP100VDA060-50
								6MBP100VDN060-50	7MBP100VDN060-50
						150A	6MBP150XDA065-50	7MBP150XDA065-50	6MBP150VDA060-50
							6MBP150XDN065-50	7MBP150XDN065-50	6MBP150VDN060-50
						200A		6MBP200VDA060-50	7MBP200VDA060-50
							6MBP200XDN065-50	6MBP200VDN060-50	7MBP200VDN060-50
						250A			
							6MBP250XDN065-50	7MBP250XDN065-50	

Dimension [mm]

■ IPM (Intelligent Power Module) 1200V class

Built-in protection functions

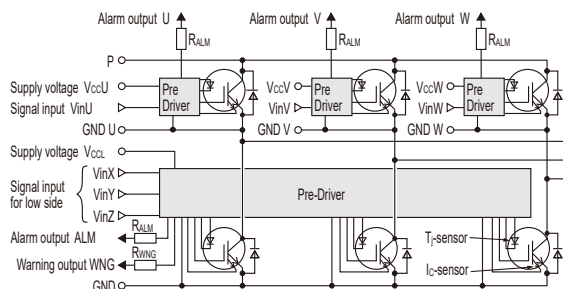
P-side fault status output (Alarm)
N-side fault status output (Alarm)
Under voltage protection (self shutdown)
Over current protection (self shutdown)
Overheating protection (self shutdown)

						1200V			
						X series		V series	
						Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
	✓	✓	✓	✓	✓	I _c			
						25A		6MBP25VDA120-50	7MBP25VDA120-50
						35A		6MBP35VDA120-50	7MBP35VDA120-50
						50A	6MBP50XDA120-50	7MBP50XDA120-50	6MBP50VDA120-50
								6MBP50VDN120-50	7MBP50VDN120-50
						75A	6MBP75XDA120-50	7MBP75XDA120-50	6MBP75VDA120-50
							6MBP75XDN120-50	7MBP75XDN120-50	6MBP75VDN120-50
						100A	6MBP100XDA120-50	7MBP100XDA120-50	6MBP100VDA120-50
							6MBP100XDN120-50	7MBP100XDN120-50	6MBP100VDN120-50
						150A			
							6MBP150XDN120-50	7MBP150XDN120-50	

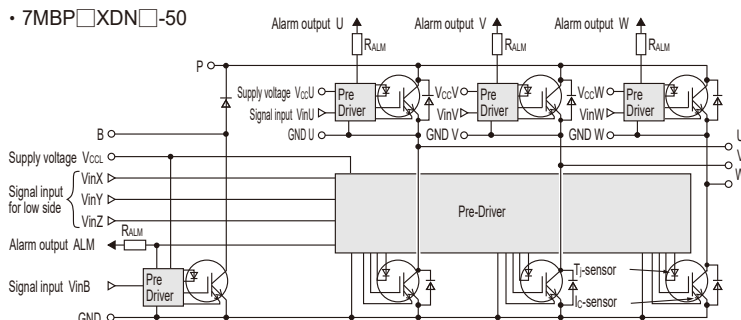
Dimension [mm]

●Block Diagram

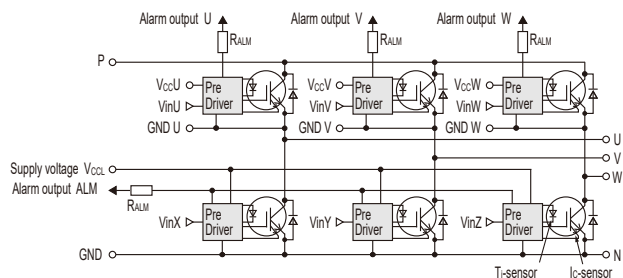
- 6MBP□XDA□-50
- 6MBP□XDN□-50



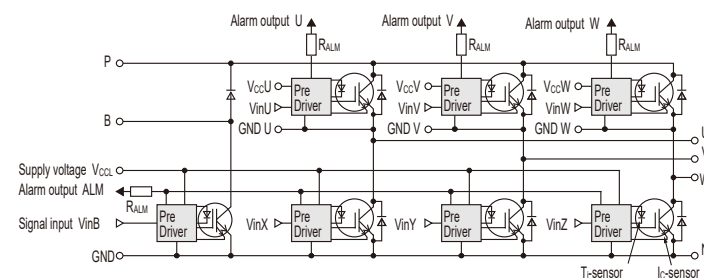
- 7MBP□XDA□-50
- 7MBP□XDN□-50



- 6MBP□VDA□-50
- 6MBP□VDN□-50



- 7MBP□VDA□-50
- 7MBP□VDN□-50



■ X series

Device type	Inverter			Brake		Control								Package	Net
	V_{CES}	I_C	$V_{CE(sat)}$	V_{CES}	I_C	V_{CC}	$I_{OC[INV]}$	V_{UV}	T_{jw}	T_{jOH}	Alarm signal hold time				mass
	Volts	Amps.	Volts	Volts	Amps.	(V)	(A)	(V)	(°C)	(°C)	OC typ.	UV typ.	T_{jOH} typ.		Grams
○ 6MBP100XDA065-50	650	100	1.15	-	-	15	150	12.5	150	175	2	4	8	P630	290
○ 6MBP150XDA065-50	650	150	1.15	-	-	15	225	12.5	150	175	2	4	8	P630	290
○ 6MBP150XDN065-50	650	150	1.15	-	-	15	225	12.5	150	175	2	4	8	P630	290
○ 6MBP200XDN065-50	650	200	1.15	-	-	15	300	12.5	150	175	2	4	8	P630	290
○ 6MBP250XDN065-50	650	250	1.15	-	-	15	375	12.5	150	175	2	4	8	P630	290
○ 7MBP100XDA065-50	650	100	1.15	650	50	15	150	12.5	-	175	2	4	8	P630	290
○ 7MBP150XDA065-50	650	150	1.15	650	75	15	225	12.5	-	175	2	4	8	P630	290
○ 7MBP150XDN065-50	650	150	1.15	650	75	15	225	12.5	-	175	2	4	8	P630	290
○ 7MBP200XDN065-50	650	200	1.15	650	100	15	300	12.5	-	175	2	4	8	P630	290
○ 7MBP250XDN065-50	650	250	1.15	650	125	15	375	12.5	-	175	2	4	8	P630	290
○ 6MBP50XDA120-50	1200	50	1.45	-	-	15	75	12.5	150	175	2	4	8	P630	290
○ 6MBP75XDA120-50	1200	75	1.45	-	-	15	113	12.5	150	175	2	4	8	P630	290
○ 6MBP75XDN120-50	1200	75	1.45	-	-	15	113	12.5	150	175	2	4	8	P630	290
○ 6MBP100XDA120-50	1200	100	1.45	-	-	15	150	12.5	150	175	2	4	8	P630	290
○ 6MBP100XDN120-50	1200	100	1.45	-	-	15	150	12.5	150	175	2	4	8	P630	290
○ 6MBP150XDN120-50	1200	150	1.45	-	-	15	225	12.5	150	175	2	4	8	P630	290
○ 7MBP50XDA120-50	1200	50	1.45	1200	25	15	75	12.5	-	175	2	4	8	P630	290
○ 7MBP75XDA120-50	1200	75	1.45	1200	35	15	113	12.5	-	175	2	4	8	P630	290
○ 7MBP75XDN120-50	1200	75	1.45	1200	35	15	113	12.5	-	175	2	4	8	P630	290
○ 7MBP100XDA120-50	1200	100	1.45	1200	50	15	150	12.5	-	175	2	4	8	P630	290
○ 7MBP100XDN120-50	1200	100	1.45	1200	50	15	150	12.5	-	175	2	4	8	P630	290
○ 7MBP150XDN120-50	1200	150	1.45	1200	75	15	225	12.5	-	175	2	4	8	P630	290

Note1 : The products with "XDN" on this page have Low Thermal Impedance Version.

 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, ChipNote2 : T_{jw} is the warning temperature for IGBT chip overheating.

○: Under development

■ V series

Device type	Inverter			Brake		Control								Package		Net	
	V_{CES}	I_C Cont.	$V_{CE(sat)}$ typ.	V_{CES}	I_C Cont.	V_{CC} typ.	$I_{oc[INV]}$ min.	V_{UV} max.	T_{Jw} min.	T_{JOH} min.	Alarm signal hold time			OC typ.	UV typ.	T_{JOH} typ.	mass
	Volts	Amps.	Volts	Volts	Amps.	(V)	(A)	(V)	(°C)	(°C)	ms	ms	ms				
6MBP50VDA060-50	600	50	1.4	-	-	15	75	12.5	-	150	2	4	8	P630		290	
6MBP75VDA060-50	600	75	1.4	-	-	15	113	12.5	-	150	2	4	8	P630		290	
6MBP100VDA060-50	600	100	1.4	-	-	15	150	12.5	-	150	2	4	8	P630		290	
6MBP100VDN060-50	600	100	1.4	-	-	15	150	12.5	-	150	2	4	8	P630		290	
6MBP150VDA060-50	600	150	1.4	-	-	15	225	12.5	-	150	2	4	8	P630		290	
6MBP150VDN060-50	600	150	1.4	-	-	15	225	12.5	-	150	2	4	8	P630		290	
6MBP200VDA060-50	600	200	1.4	-	-	15	300	12.5	-	150	2	4	8	P630		290	
6MBP200VDN060-50	600	200	1.4	-	-	15	300	12.5	-	150	2	4	8	P630		290	
7MBP50VDA060-50	600	50	1.4	600	30	15	75	12.5	-	150	2	4	8	P630		290	
7MBP75VDA060-50	600	75	1.4	600	50	15	113	12.5	-	150	2	4	8	P630		290	
7MBP100VDA060-50	600	100	1.4	600	50	15	150	12.5	-	150	2	4	8	P630		290	
7MBP100VDN060-50	600	100	1.4	600	50	15	150	12.5	-	150	2	4	8	P630		290	
7MBP150VDA060-50	600	150	1.4	600	75	15	225	12.5	-	150	2	4	8	P630		290	
7MBP150VDN060-50	600	150	1.4	600	75	15	225	12.5	-	150	2	4	8	P630		290	
7MBP200VDA060-50	600	200	1.4	600	100	15	300	12.5	-	150	2	4	8	P630		290	
7MBP200VDN060-50	600	200	1.4	600	100	15	300	12.5	-	150	2	4	8	P630		290	
6MBP25VDA120-50	1200	25	1.7	-	-	15	38	12.5	-	150	2	4	8	P630		290	
6MBP35VDA120-50	1200	35	1.7	-	-	15	53	12.5	-	150	2	4	8	P630		290	
6MBP50VDA120-50	1200	50	1.7	-	-	15	75	12.5	-	150	2	4	8	P630		290	
6MBP50VDN120-50	1200	50	1.7	-	-	15	75	12.5	-	150	2	4	8	P630		290	
6MBP75VDA120-50	1200	75	1.7	-	-	15	113	12.5	-	150	2	4	8	P630		290	
6MBP75VDN120-50	1200	75	1.7	-	-	15	113	12.5	-	150	2	4	8	P630		290	
6MBP100VDA120-50	1200	100	1.7	-	-	15	150	12.5	-	150	2	4	8	P630		290	
6MBP100VDN120-50	1200	100	1.7	-	-	15	150	12.5	-	150	2	4	8	P630		290	
7MBP25VDA120-50	1200	25	1.7	1200	15	15	38	12.5	-	150	2	4	8	P630		290	
7MBP35VDA120-50	1200	35	1.7	1200	15	15	53	12.5	-	150	2	4	8	P630		290	
7MBP50VDA120-50	1200	50	1.7	1200	25	15	75	12.5	-	150	2	4	8	P630		290	
7MBP50VDN120-50	1200	50	1.7	1200	25	15	75	12.5	-	150	2	4	8	P630		290	
7MBP75VDA120-50	1200	75	1.7	1200	35	15	113	12.5	-	150	2	4	8	P630		290	
7MBP75VDN120-50	1200	75	1.7	1200	35	15	113	12.5	-	150	2	4	8	P630		290	
7MBP100VDA120-50	1200	100	1.7	1200	50	15	150	12.5	-	150	2	4	8	P630		290	
7MBP100VDN120-50	1200	100	1.7	1200	50	15	150	12.5	-	150	2	4	8	P630		290	

Note : The products with "VDN" on this page have Low Thermal Impedance Version.

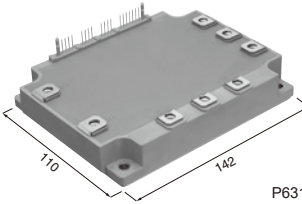
 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

IGBT Module IPM < X series / V series >

■ IPM (Intelligent Power Module) 600V, 650V class

Built-in protection functions

P-side fault status output (Alarm)
N-side fault status output (Alarm)
Under voltage protection (self shutdown)
Over current protection (self shutdown)
Overheating protection (self shutdown)

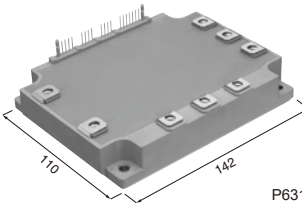
						I _c	650V		600V	
							X series		V series	
							Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
	✓	✓	✓	✓	✓	200A	6MBP200XEN065-50	7MBP200XEN065-50	6MBP200VEA060-50	7MBP200VEA060-50
						300A	6MBP300XEN065-50	7MBP300XEN065-50	6MBP300VEA060-50	7MBP300VEA060-50
						400A			6MBP400VEA060-50	7MBP400VEA060-50
						450A	6MBP450XEN065-50	7MBP450XEN065-50		

Dimension [mm]

■ IPM (Intelligent Power Module) 1200V class

Built-in protection functions

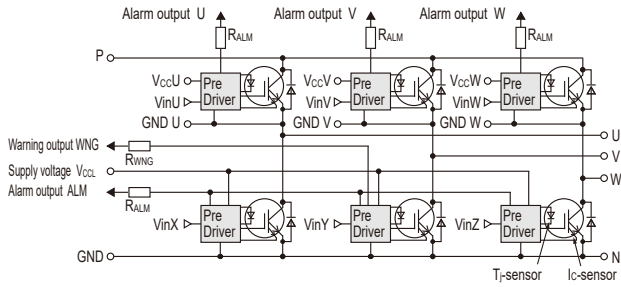
P-side fault status output (Alarm)
N-side fault status output (Alarm)
Under voltage protection (self shutdown)
Over current protection (self shutdown)
Overheating protection (self shutdown)

						I _c	1200V			
							X series		V series	
							Without Brake-Chopper	With Brake-Chopper	Without Brake-Chopper	With Brake-Chopper
	✓	✓	✓	✓	✓	100A	6MBP100XEN120-50	7MBP100XEN120-50	6MBP100VEA120-50	7MBP100VEA120-50
						150A	6MBP150XEN120-50	7MBP150XEN120-50	6MBP150VEA120-50	7MBP150VEA120-50
						200A	6MBP200XEN120-50	7MBP200XEN120-50	6MBP200VEA120-50	7MBP200VEA120-50
						300A	6MBP300XEN120-50	7MBP300XEN120-50		

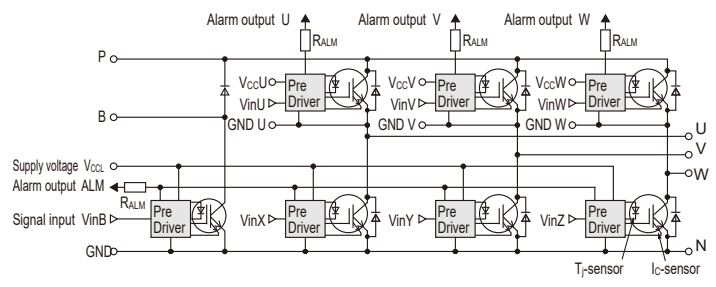
Dimension [mm]

● Block Diagram

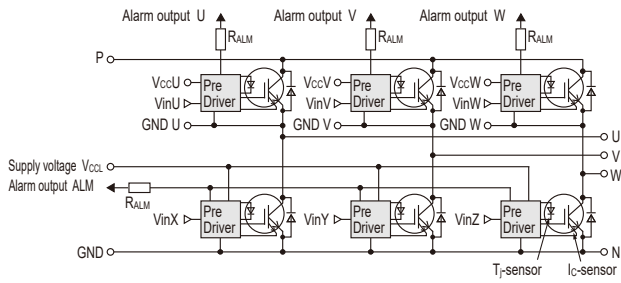
• 6MBP□XEN□-50



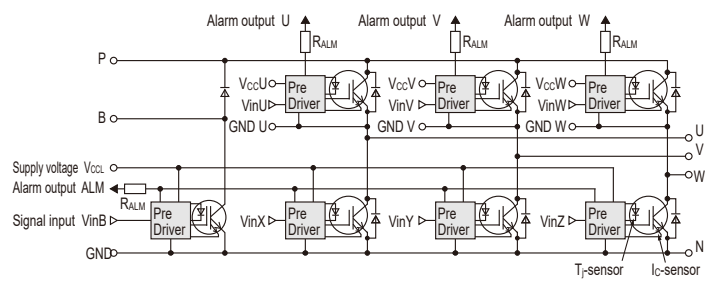
• 7MBP□XEN□-50



• 6MBP□VEA□-50



• 7MBP□VEA□-50



■ X series

Device type	Inverter			Brake		Control								Package	Net
	V_{CES}	I_C	$V_{CE(sat)}$	V_{CES}	I_C	V_{CC}	$I_{OC[INV]}$	V_{UV}	T_{jw}	T_{JOH}	Alarm signal hold time				mass
	Volts	Amps.	Volts	Volts	Amps.	(V)	(A)	(V)	(°C)	(°C)	OC typ.	UV typ.	T_{JOH} typ.		Grams
○ 6MBP200XEN065-50	650	200	TBD	-	-	15	300	12.5	150	175	2	4	8	P631	940
○ 6MBP300XEN065-50	650	300	TBD	-	-	15	450	12.5	150	175	2	4	8	P631	940
○ 6MBP450XEN065-50	650	450	TBD	-	-	15	675	12.5	150	175	2	4	8	P631	940
○ 7MBP200XEN065-50	650	200	TBD	650	100	15	300	12.5	-	175	2	4	8	P631	940
○ 7MBP300XEN065-50	650	300	TBD	650	150	15	450	12.5	-	175	2	4	8	P631	940
○ 7MBP450XEN065-50	650	450	TBD	650	225	15	675	12.5	-	175	2	4	8	P631	940
○ 6MBP100XEN120-50	1200	100	TBD	-	-	15	150	12.5	150	175	2	4	8	P631	940
○ 6MBP150XEN120-50	1200	150	TBD	-	-	15	225	12.5	150	175	2	4	8	P631	940
○ 6MBP200XEN120-50	1200	200	TBD	-	-	15	300	12.5	150	175	2	4	8	P631	940
○ 6MBP300XEN120-50	1200	300	TBD	-	-	15	450	12.5	150	175	2	4	8	P631	940
○ 7MBP100XEN120-50	1200	100	TBD	1200	50	15	150	12.5	-	175	2	4	8	P631	940
○ 7MBP150XEN120-50	1200	150	TBD	1200	75	15	225	12.5	-	175	2	4	8	P631	940
○ 7MBP200XEN120-50	1200	200	TBD	1200	100	15	300	12.5	-	175	2	4	8	P631	940
○ 7MBP300XEN120-50	1200	300	TBD	1200	150	15	450	12.5	-	175	2	4	8	P631	940

Note: T_{jw} is the warning temperature for IGBT chip overheating. $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

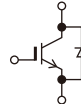
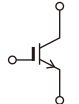
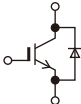
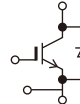
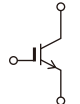
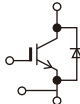
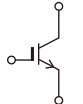
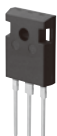
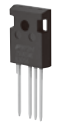
○: Under development

■ V series

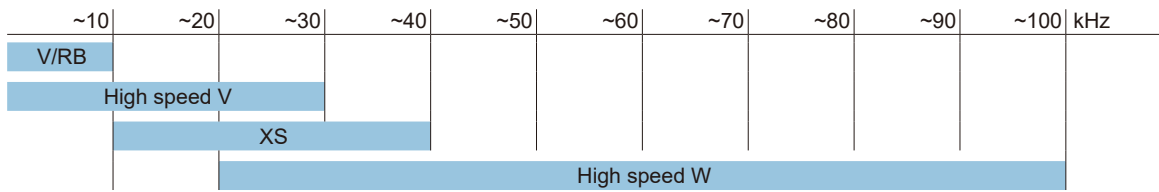
Device type	Inverter			Brake		Control								Package	Net mass Grams
	V _{CES}	I _C Cont.	V _{CE(sat)} typ.	V _{CES}	I _C Cont.	V _{CC} typ.	I _{OC} [INV] min.	V _{UV} max.	T _{jw} min.	T _{JOH} min.	Alarm signal hold time				
	Volts	Amps.	Volts	Volts	Amps.	(V)	(A)	(V)	(°C)	(°C)	OC typ. ms	UV typ. ms	T _{JOH} typ. ms		
6MBP200VEA060-50	600	200	1.25	-	-	15	300	12.5	-	150	2	4	8	P631	940
6MBP300VEA060-50	600	300	1.25	-	-	15	450	12.5	-	150	2	4	8	P631	940
6MBP400VEA060-50	600	400	1.25	-	-	15	600	12.5	-	150	2	4	8	P631	940
7MBP200VEA060-50	600	200	1.25	600	100	15	300	12.5	-	150	2	4	8	P631	940
7MBP300VEA060-50	600	300	1.25	600	150	15	450	12.5	-	150	2	4	8	P631	940
7MBP400VEA060-50	600	400	1.25	600	200	15	600	12.5	-	150	2	4	8	P631	940
6MBP100VEA120-50	1200	100	1.7	-	-	15	150	12.5	-	150	2	4	8	P631	940
6MBP150VEA120-50	1200	150	1.7	-	-	15	225	12.5	-	150	2	4	8	P631	940
6MBP200VEA120-50	1200	200	1.7	-	-	15	300	12.5	-	150	2	4	8	P631	940
7MBP100VEA120-50	1200	100	1.7	1200	50	15	150	12.5	-	150	2	4	8	P631	940
7MBP150VEA120-50	1200	150	1.7	1200	75	15	225	12.5	-	150	2	4	8	P631	940
7MBP200VEA120-50	1200	200	1.7	1200	100	15	300	12.5	-	150	2	4	8	P631	940

 $V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

Discrete IGBT

Package	V _{CES} (V)	I _C (A)	Trench-FS								RB-IGBT	
			V series	High-Speed V series		High-Speed W series			XS series			
												
 TO-247 (Type: B)	600/ 650	30	FGW30N60VD					FGW30N65W			FGW30XS65	
									FGW30XS65C			
		35		FGW35N60HD FGW35N60HC	FGW35N60H							
		40				FGW40N65WD FGW40N65WE		FGW40N65W		FGW40XS65C		
		50	FGW50N60VD	FGW50N60HD FGW50N60HC	FGW50N60H	FGW50N65WD FGW50N65WE		FGW50N65W	FGW50XS65D FGW50XS65C		FGW50XS65	
		60				FGW60N65WD FGW60N65WE		FGW60N65W				
		75		FGW75N60HD FGW75N60HC	FGW75N60H			FGW75N65W	FGW75XS65D FGW75XS65C		FGW75XS65	
		85										FGW85N60RB
	1200	15	FGW15N120VD	FGW15N120HD	FGW15N120H							
			FGW25N120VD			FGW25N120WD FGW25N120WE		FGW25N120W				
		25										
		30		FGW30N120HD	FGW30N120H							
		40	FGW40N120VD	FGW40N120HD	FGW40N120H	FGW40N120WD FGW40N120WE		FGW40N120W	FGW40XS120C		FGW40XS120	
		75							FGW75XS120C		FGW75XS120	
 TO-247-4	650	50					FGZ50N65WD FGZ50N65WE					
		75								FGZ75XS65C		
	1200	40					FGZ40N120WE					
		75								FGZ75XS120C		

Recommended operating frequency



Part numbers

FGW40XS65C (example) : XS series

F	G		W		40	XS		65	C		
Company	Device code		Package code		Current	Series		Voltage	Diode Type		
Fuji	G	IGBT	W	TO-247 (Type: B)	×1	XS	XS series	65	650V	C	w/ Diode (Full rated)
			Z	TO-247-4						D	w/ Diode
										Blank	w/o Diode

FGW40N65WD (example) : Except for XS series

F	G		W		40	N		65	W			D	
Company	Device code		Package code		Current	Polarity		Voltage	Series			Diode Type	
Fuji	G	IGBT	W	TO-247 (Type: B)	×1	N	N-ch	60	600V	W	High Speed W series	C,E	w/ Diode (Full rated)
								65	650V	H	High Speed V series		
			Z	TO-247-4				120	1200V	V	V series	D	w/ Diode
										RB	RB-IGBT	Blank	w/o Diode

Discrete IGBT XS series

Features

- IGBT in Trench-gate structure and Field-stop technology
- Low $V_{CE(sat)}$ and low switching Loss

650V, 1200V class

Device type	Maximum Ratings				$V_{CE(sat)}$ typ.	E_{on} ($R_g=10\Omega$) typ.	E_{off} (mJ)	Q_G typ.	V_F typ.	I_F $T_C=100^\circ\text{C}$ (A)	Q_{rr} typ.	Package	Net mass Grams
	V_{CES} (V)	I_C $T_C=100^\circ\text{C}$ (A)	I_{CP} (A)	P_D IGBT (W)									
FGW30XS65	650	30	120	174	1.35	0.27	0.21	130	-	-	-	TO-247 (Type: B)	6.0
FGW30XS65C	650	30	120	174	1.35	0.27	0.21	130	1.70	30	0.74	TO-247 (Type: B)	6.0
FGW40XS65	650	40	160	234	1.35	0.40	0.30	160	-	-	-	TO-247 (Type: B)	6.0
FGW40XS65C	650	40	160	234	1.35	0.40	0.30	160	1.70	40	0.90	TO-247 (Type: B)	6.0
FGW50XS65	650	50	200	290	1.35	0.60	0.38	210	-	-	-	TO-247 (Type: B)	6.0
FGW50XS65D	650	50	200	290	1.35	0.54	0.38	210	1.70	30	-	TO-247 (Type: B)	6.0
FGW50XS65C	650	50	200	290	1.35	0.60	0.38	210	1.70	50	0.80	TO-247 (Type: B)	6.0
FGW75XS65	650	75	300	437	1.35	1.30	0.94	300	-	-	-	TO-247 (Type: B)	6.0
FGW75XS65D	650	50	200	290	1.35	1.00	0.94	300	1.70	30	0.50	TO-247 (Type: B)	6.0
FGW75XS65C	650	75	300	437	1.35	1.30	0.94	300	1.70	75	1.10	TO-247 (Type: B)	6.0
FGZ75XS65C	650	75	300	437	1.35	0.50	0.74	300	1.70	75	0.56	TO-247-4	6.0
● FGW40XS120C	1200	40	160	351	1.60	1.40	1.70	250	2.90	40	1.10	TO-247 (Type: B)	6.0
● FGW40XS120	1200	40	160	351	1.60	1.40	1.70	250	-	-	-	TO-247 (Type: B)	6.0
● FGW75XS120C	1200	75	300	649	1.60	4.40	3.00	500	2.90	75	3.8	TO-247 (Type: B)	6.0
● FGW75XS120	1200	75	300	649	1.60	4.40	3.00	500	-	-	-	TO-247 (Type: B)	6.0
○ FGZ75XS120C	1200	75	300	649	1.60	TBD	TBD	TBD	2.90	75	TBD	TO-247-4	6.0

● : New products ○ : Under development

Discrete IGBT High Speed W series

Features

- IGBT in Trench-gate structure and Field-stop technology
- Low $V_{CE(sat)}$ and low switching Loss
- High switching frequency (to 100kHz)

650V, 1200V class

Device type	Maximum Ratings				$V_{CE(sat)}$ typ.	E_{on} ($R_g=10\Omega$) typ.	E_{off} (mJ)	Q_G typ.	V_F typ.	I_F $T_C=100^\circ\text{C}$ (A)	Q_{rr} typ.	Package	Net mass Grams
	V_{CES} (V)	I_C $T_C=100^\circ\text{C}$ (A)	I_{CP} (A)	P_D IGBT (W)									
FGW30N65W	650	30	120	180	1.8	0.12	0.15	128	-	-	-	TO-247 (Type: B)	6.0
FGW40N65W	650	40	160	260	1.8	0.29	0.29	180	-	-	-	TO-247 (Type: B)	6.0
FGW40N65WD	650	40	160	260	1.8	0.29	0.29	180	2.5	20	0.26	TO-247 (Type: B)	6.0
FGW40N65WE	650	40	160	260	1.8	0.29	0.29	180	2.5	40	0.29	TO-247 (Type: B)	6.0
FGW50N65W	650	50	200	330	1.8	0.42	0.46	215	-	-	-	TO-247 (Type: B)	6.0
FGW50N65WD	650	50	200	330	1.8	0.42	0.46	215	2.5	25	0.32	TO-247 (Type: B)	6.0
FGW50N65WE	650	50	200	330	1.8	0.42	0.46	215	2.5	50	0.35	TO-247 (Type: B)	6.0
FGZ50N65WD	650	50	200	330	1.8	0.12	0.40	215	2.5	25	0.32	TO-247-4	6.0
FGZ50N65WE	650	50	200	330	1.8	0.12	0.40	215	2.5	50	0.35	TO-247-4	6.0
FGW60N65W	650	60	240	405	1.8	0.6	0.67	250	-	-	-	TO-247 (Type: B)	6.0
FGW60N65WD	650	60	240	405	1.8	0.6	0.67	250	2.5	30	0.3	TO-247 (Type: B)	6.0
FGW60N65WE	650	60	240	405	1.8	0.6	0.67	250	2.5	60	0.33	TO-247 (Type: B)	6.0
FGW75N65W	650	75	300	520	1.8	0.95	1.2	300	-	-	-	TO-247 (Type: B)	6.0
FGW75N65WE	650	75	300	520	1.8	0.95	1.2	300	2.5	75	0.41	TO-247 (Type: B)	6.0
FGZ75N65WE	650	75	300	520	1.8	0.37	0.68	300	2.5	75	0.41	TO-247-4	6.0
FGW25N120W	1200	25	100	270	2.0	0.9	1.3	80	-	-	-	TO-247 (Type: B)	6.0
FGW25N120WD	1200	25	100	270	2.0	0.9	1.3	80	2.2	12	0.6	TO-247 (Type: B)	6.0
FGW25N120WE	1200	25	100	270	2.0	0.9	1.3	80	2.2	25	0.6	TO-247 (Type: B)	6.0
FGW40N120W	1200	40	160	430	2.0	2.8	1.6	120	-	-	-	TO-247 (Type: B)	6.0
FGW40N120WD	1200	40	160	430	2.0	2.8	1.6	120	2.2	20	0.95	TO-247 (Type: B)	6.0
FGW40N120WE	1200	40	160	430	2.0	2.8	1.6	120	2.4	40	2.2	TO-247 (Type: B)	6.0
FGZ40N120WE	1200	40	160	430	2.0	1.1	1.4	120	2.4	40	2.2	TO-247-4	6.0

Discrete IGBT V/High Speed V series

Features

- IGBT in Trench-gate structure and Field-stop technology
- Low $V_{CE(sat)}$ and low switching Loss
(High Speed V series)
- Short circuit withstand time; $t_{sc}=10\mu s$ (V series)

600V class

Device type	Maximum Ratings				$V_{CE(sat)}$ typ.	E_{on} ($R_g=10\Omega$) typ.	E_{off} (mJ)	Q_G typ.	V_F typ.	I_F $T_c=100^\circ C$ (A)	Q_{rr} typ.	Package	Net mass Grams
	V_{CES} (V)	I_C $T_c=100^\circ C$ (A)	I_{CP} (A)	P_D IGBT (W)									
FGW30N60VD	600	30	60	230	1.6	1.2	0.7	225	1.5	25	0.7	TO-247 (Type: B)	6.0
FGW35N60H	600	35	105	230	1.5	0.9	0.85	210	-	-	-	TO-247 (Type: B)	6.0
FGW35N60HD	600	35	105	230	1.5	0.9	0.85	210	2.0	15	0.06	TO-247 (Type: B)	6.0
FGW35N60HC	600	35	105	230	1.5	0.95	0.85	210	2.35	35	0.13	TO-247 (Type: B)	6.0
FGW50N60H	600	50	150	360	1.5	1.4	1.7	305	-	-	-	TO-247 (Type: B)	6.0
FGW50N60HD	600	50	150	360	1.5	1.4	1.7	305	2.0	25	0.08	TO-247 (Type: B)	6.0
FGW50N60HC	600	50	150	360	1.5	1.5	1.7	305	2.3	50	0.07	TO-247 (Type: B)	6.0
FGW50N60VD	600	50	100	360	1.6	2.4	1.4	360	1.5	35	0.75	TO-247 (Type: B)	6.0
FGW75N60H	600	75	225	500	1.5	3.0	4.2	460	-	-	0.12	TO-247 (Type: B)	6.0
FGW75N60HD	600	75	225	500	1.5	3.0	4.2	460	2.0	35	0.13	TO-247 (Type: B)	6.0
FGW75N60HC	600	75	225	500	1.5	3.8	4.2	460	2.3	75	0.3	TO-247 (Type: B)	6.0

1200V class

Device type	Maximum Ratings				$V_{CE(sat)}$ typ.	E_{on} ($R_g=10\Omega$) typ.	E_{off} (mJ)	Q_G typ.	V_F typ.	I_F $T_c=100^\circ C$ (A)	Q_{rr} typ.	Package	Net mass Grams
	V_{CES} (V)	I_C $T_c=100^\circ C$ (A)	I_{CP} (A)	P_D IGBT (W)									
FGW15N120H	1200	15	45	155	1.8	0.6	0.8	140	-	-	-	TO-247 (Type: B)	6.0
FGW15N120HD	1200	15	45	155	1.8	0.6	0.8	140	2.2	12	0.6	TO-247 (Type: B)	6.0
FGW15N120VD	1200	15	30	155	1.85	1.1	0.8	150	1.7	15	0.85	TO-247 (Type: B)	6.0
FGW25N120VD	1200	25	50	260	1.85	2.2	1.4	235	1.7	25	1.2	TO-247 (Type: B)	6.0
FGW30N120H	1200	30	90	260	1.8	1.6	1.5	230	-	-	-	TO-247 (Type: B)	6.0
FGW30N120HD	1200	30	90	260	1.8	1.6	1.5	230	2.2	20	0.95	TO-247 (Type: B)	6.0
FGW40N120H	1200	40	120	340	1.8	2.8	1.8	300	-	-	-	TO-247 (Type: B)	6.0
FGW40N120HD	1200	40	120	340	1.8	2.8	1.8	300	2.2	30	1.35	TO-247 (Type: B)	6.0
FGW40N120VD	1200	40	80	340	1.85	4.3	2.2	320	1.7	30	1.45	TO-247 (Type: B)	6.0

Discrete RB-IGBT

Features

- Reverse blocking characters are realized for 1 chip by Fuji's original technology.
- High efficiency by applying a T-type 3 level inverter circuit.

600V class

Device type	Maximum Ratings					$V_{CE(sat)}$ ($V_{GE}=15V$) typ.	E_{on} ($R_g=10\Omega$) typ.	E_{off} (mJ)	Q_G typ.	t_{rr} typ.	Package	Net mass Grams
	V_{CES} (V)	I_C $T_c=100^\circ C$ (A)	I_{CP} (A)	t_{sc} (μs)	P_D IGBT (W)							
FGW85N60RB	600	85	170	10	600	2.45	4.7	2.4	300	165	TO-247 (Type: B)	6.0

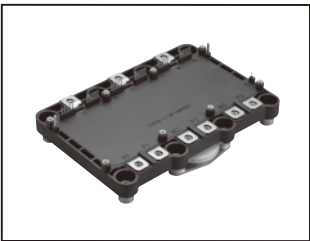
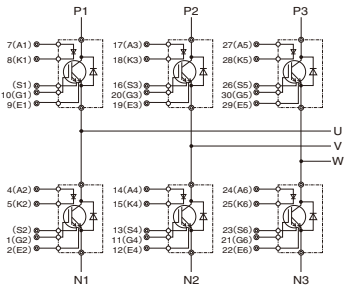
IGBT Module for Electric Vehicle and Hybrid Electric Vehicle

IGBT Module for Electric Vehicle and Hybrid Electric Vehicle

Features

- 7th Generation “RC-IGBT” 750V-IGBT
- Direct liquid Cooling AL Water jacket
- High power density, small and light weight package
- High reliability : T_{vjmax} 175°C guaranteed
- RoHS compliant

Characteristics



$V_{CE(sat)}$: at $T_{vj}=25^{\circ}\text{C}$, Chip

Device type	V_{CES} (V)	$I_{C(Cont)}$ (A)	$I_{C(Peak)}$ (A)	$V_{CE(sat)}$ typ. (V)	V_F typ. (V)	Package	Net mass Grams
6MBI800XV-075V-01	750	570	1600	1.45 ($I_C=800\text{A}$)	1.50 ($I_F=800\text{A}$)	M653	560

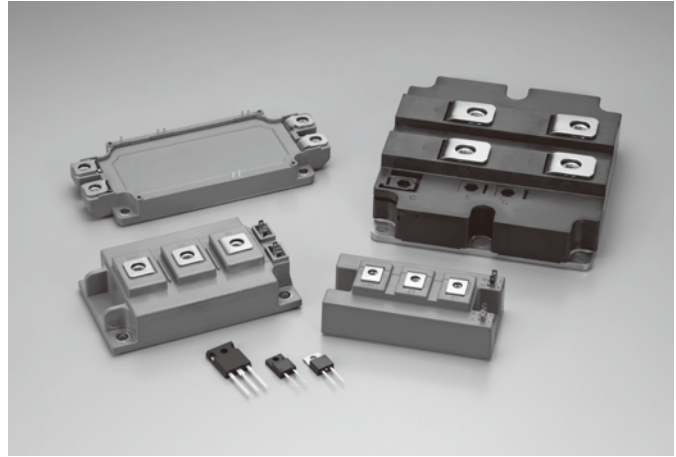
SiC Devices

IGBT Hybrid Modules with SiC-SBD.....	68
All-SiC Modules	72
SiC Schottky-Barrier Diodes (SBD).....	73

SiC Devices



SiC devices have excellent characteristics that realize high blocking voltage, low power dissipation, high-frequency operation and high-temperature operation. Power semiconductors that make use of SiC achieve significant reduction in energy consumption, and can be used to develop smaller and lighter products.



IGBT Hybrid Modules with SiC-SBD X series / V series

■ Features

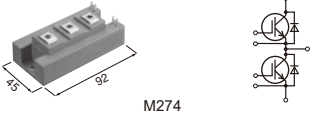
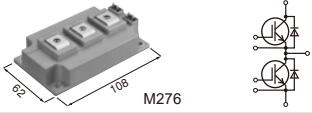
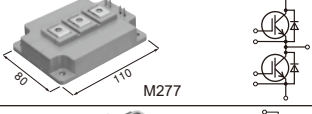
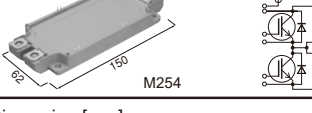
- High performance chips
 - X series / V series IGBT for low loss operation
 - SiC-SBD for low loss operation
- The same package lineup as the conventional Si-IGBT modules

■ Part numbers

2MSI300VAH-120C-53 (example)

2	MS	I	300	V	A	H	120	C	53
Number of IGBT Switches	Chip : Si-IGBT+SiC-SBD	Internal Configuration	Rated Current	IGBT Device Technology	SBD Dvice	Package Type	Max V_{CE}	SiC-SBD for converter	RoHS Compliant
	MS Si-IGBT+SiC-SBD	I: Standard Modules	×1	V: V series (6th Generation)	A: 1st Generation		120: 1200V	C: Large current	None, 01 to 49 Non RoHS Compliant
	S SiC-SBD			X: X series (7th Generation)			170: 1700V		50 to 99 RoHS Compliant
				VW: VW series (6th Gen High speed)			330: 3300V		

■ Standard 2-pack 1200, 1700V class

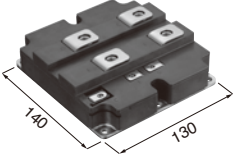
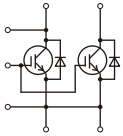
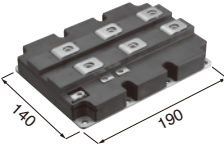
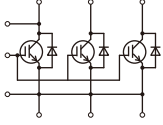
		I_C	1200V	1700V	1200V
			IGBT Hybrid Modules with SiC-SBD V series		IGBT Hybrid Modules with SiC-SBD VW series
 M274		200A	2MSI200VAB-120-53		
 M276		200A			2MSI200VWAH-120-53
		300A	2MSI300VAH-120C-53		2MSI300VWAH-120-53
 M277		400A		2MSI400VAE-170-53	
 M254		300A	2MSI300VAN-120-53		2MSI300VWAN-120-53
		450A	2MSI450VAN-120-53		
		550A		2MSI550VAN-170-53	
		600A	2MSI600VAN-120-53		

Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	Volts	Amps.	t_{on} typ.	t_{off} typ.	t_f typ.		
							$\mu sec.$	$\mu sec.$	$\mu sec.$		Grams
● 2MSI200VAB-120-53	1200	± 20	200	1500	1.75	200	0.64	0.70	0.07	M274	240
● 2MSI300VAH-120C-53	1200	± 20	300	1600	1.75	300	0.82	0.84	0.09	M276	370
● 2MSI300VAN-120-53	1200	± 20	300	1595	1.75	300	0.49	0.72	0.12	M254	300
● 2MSI450VAN-120-53	1200	± 20	450	2270	1.75	450	0.36	0.72	0.07	M254	300
● 2MSI600VAN-120-53	1200	± 20	600	3750	1.85	600	0.55	1.05	0.11	M254	300
○ 2MSI200VWAH-120-53	1200	± 20	200	1500	2.45	200	0.21	0.30	0.06	M276	370
○ 2MSI300VWAH-120-53	1200	± 20	300	1600	2.50	300	0.33	0.32	0.06	M276	370
○ 2MSI300VWAN-120-53	1200	± 20	300	1600	2.60	300	0.30	0.40	0.11	M254	300
○ 2MSI550VAN-170-53	1700	± 20	550	3750	2.15	550	0.69	1.18	0.10	M254	300
● 2MSI400VAE-170-53	1700	± 20	400	4540	2.00	400	1.05	1.95	0.09	M277	470

● : New Products ○ : Under development

■ Standard 1-pack 3300V class

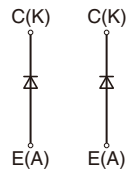
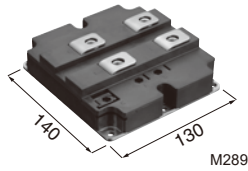
		3300V	
		IGBT Hybrid Modules with SiC-SBD X series	
 M155		I_C	
		1200A	1MSI1200XAGF330-03
 M156		1800A	1MSI1800XAEF330-03

Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	$V_{CE(sat)}$ ($V_{GE}=15V$)		Switching time			Package	Net mass
	Volts	Volts	Amps. Cont.	Watts	Volts typ.	I_C Amps.	$t_{d(on)}$ typ. $\mu sec.$	$t_{d(off)}$ typ. $\mu sec.$	t_f typ. $\mu sec.$		
○ 1MSI1200XAGF330-03	3300	±20	1200	12500	2	1200	1.6	1.65	1.25	M155	900
○ 1MSI1800XAEF330-03	3300	±20	1800	18650	2	1800	1.6	1.8	1.3	M156	1300

○ : Under development

■ Standard 2-pack 3300V class



I_C	3300V
	SiC-SBD series
900A	2SI900AGF330-03

Dimension [mm]

Device type	V_{CES}	V_{GES}	I_C	P_{tot}	V_F	I_C	Switching time			Package	Net mass
	Volts	Volts	Amps. Cont.	Watts	Volts typ.		$t_{d(on)}$ typ. (μs)	$t_{d(off)}$ typ. (μs)	t_f typ. (μs)		
○ 2SI900AGF330-03	3300	-	900	-	2.05	900	-	-	-	M289	900

○ : Under development



All-SiC Modules

■ Features

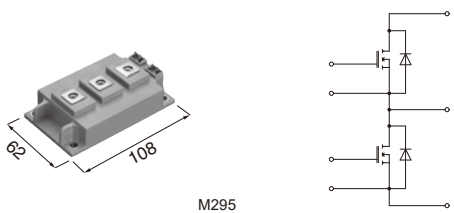
- The latest generation SiC trench gate MOSFETs for significantly low loss operation
- The compatible package lineup as the conventional Si-IGBT modules
- Lower inductance package

■ Part numbers

2CSI300DAHE-120-50 (example)

2	CS	I	300	D	A	HE	120	50
Number of MOSFET Switches	Chip	Internal Configuration	Rated Current	MOSFET Device	SBD Device	Package Type	Max V _{CE}	RoHS Compliant
	CS: SiC-MOSFET + SiC-SBD	I: Standard Modules	×1	D: 2nd Generation	A: 1st Generation		120: 1200V 170: 1700V	50 to 99 RoHS Compliant

■ Standard 2-pack 1200, 1700V class

 M295 Dimension [mm]	I _C	1200V	1700V
		2G SiC-MOSFET Modules with 1G SiC-SBD	
	200A		2CSI200DAHE170-50
	300A	2CSI300DAHE120-50	2CSI300DAHE170-50
	400A		2CSI400DAHE170-50
	450A	2CSI450DAHE120-50	
	600A	2CSI600DAHE120-50	

Device type	V _{DSS}	V _{GES}	I _D Cont.	P _{tot}	V _{DS(ON)} (V _{GS} =15V)		Switching time			Package	Net mass
	Volts	Volts	Amps.	Watts	typ. Volts	I _D Amps.	t _{on} typ. μsec.	t _{off} typ. μsec.	t _f typ. μsec.		
○ 2CSI300DAHE120-50	1200	+20V/-7V	300	905	1.15	300	0.23	0.29	0.06	M295	370
○ 2CSI450DAHE120-50	1200	+20V/-7V	450	1175	1.15	450	0.28	0.33	0.06	M295	370
○ 2CSI600DAHE120-50	1200	+20V/-7V	600	1810	1.15	600	0.28	0.33	0.06	M295	370
○ 2CSI200DAHE170-50	1700	+20V/-7V	200	780	1.05	200	0.21	0.34	0.06	M295	370
○ 2CSI300DAHE170-50	1700	+20V/-7V	300	1175	1.05	300	0.21	0.34	0.06	M295	370
○ 2CSI400DAHE170-50	1700	+20V/-7V	400	1565	1.05	400	0.21	0.34	0.06	M295	370

○ : Under development

SiC Schottky-Barrier Diodes (SBD)



■ Features of SiC-SBD 2G Series

- High speed switching
- Low- V_F : V_F is about 15% lower than the conventional products (vs. 1G 650V)
- Low- I_R
- High surge current capability: IFSM improved by about 60% compared to conventional products(vs. 1G)

■ Part numbers

FDC2PT10S65(example)

F	DC		2		PT		10	S		65	
Company code	Device code		Series		Package code		Current	Polarity		Voltage	
Fuji	DC	SiC-SBD	2	2G	AT	TO-220F-2	×1	S	Single	65	650V
					PT	TO-220-2		C	Cathode Common	120	1200V
					WT	TO-247-2 (Type: A)					

■ SiC-SBD 2G Series

SiC-SBD 2G Series			TO-220-2	TO-220F-2	TO-247-2 (Type: A)
					
Chip	V_{RRM} (V)	I_F (A)			
Single	650	6	✓	✓	
		8	✓	✓	
		10	✓	✓	
	1200	20			✓
		40			✓

Device type	Maximum rating			Thermal rating T_{vj} max.(°C)	Characteristics ($T_a=25^\circ\text{C}$)		Package	Net mass Grams
	V_{RRM}	I_F	I_{FSM}^{*1}		V_F	I_{RRM}^{*2}		
	Volts	Amps.	Amps.		typ. Volts	max. μA		
○ FDC2PT06S65	650	6	(54)	175	1.30	50	TO-220-2	2.0
○ FDC2PT08S65	650	8	(68)	175	1.30	50	TO-220-2	2.0
○ FDC2PT10S65	650	10	82	175	1.30	50	TO-220-2	2.0
○ FDC2AT06S65	650	6	(54)	175	1.30	50	TO-220F-2	1.7
○ FDC2AT08S65	650	8	(68)	175	1.30	50	TO-220F-2	1.7
○ FDC2AT10S65	650	10	82	175	1.30	50	TO-220F-2	1.7
○ FDC2WT20S120	1200	20	(145)	175	(1.57)	(10)	TO-247-2 (Type: A)	6.0
○ FDC2WT40S120	1200	40	(290)	175	(1.57)	(10)	TO-247-2 (Type: A)	6.0

*1 Half sine wave $t_p=10\text{ms}$

*2 $V_R=V_{RRM}$

○ : Under development

■ Features of SiC-SBD 1G Series

- High speed switching
- Low- V_F

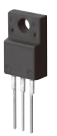
- Low- I_R
- High surge current capability

■ Part numbers

FDCP10S65A (example)

F	DC		P		10	S		65		A	
Company code	Device code		Package code		Current	Polarity		Voltage		Application	
Fuji	DC	SiC-SBD	A	TO-220F / TO-220F-2	×1	S, T	Single	65	650V	A	For Automotive
			C	T-Pack(S)		C	Cathode Common	120	1200V		
			P	TO-220 / TO-220-2							
			Y	TO-247 (Type: A)							
			W	TO-247-2 (Type: A)							

■ SiC-SBD 1G Series

SiC-SBD 1G Series			TO-220-2	TO-220	TO-220F-2	TO-220F	TO-247-2 (Type: A)	TO-247 (Type: A)	T-Pack (S)
									
Chip	V_{RRM} (V)	I_F (A)							
Single	650	10	✓		✓			✓	✓
		25	✓		✓			✓	✓
	1200	18			✓		✓	✓	
Dual	650	20		✓		✓		✓	✓
		50						✓	
	1200	36						✓	

Device type	Maximum rating			Thermal rating T_{vj} max.(°C)	Characteristics ($T_a=25^{\circ}\text{C}$)		Package	Net mass Grams
	V_{RRM} Volts	I_F Amps.	I_{FSM}^{*1} Amps.		V_F max. Volts	I_{RRM}^{*2} max. μA		
FDCP10S65	650	10	50	175	1.8	10	TO-220-2	2.0
FDCP20C65	650	20	50	175	1.8	10	TO-220	2.0
FDCP25S65	650	25	100	175	1.6	10	TO-220-2	2.0
FDCA10S65	650	10	50	175	1.8	10	TO-220F-2	1.7
FDCA20C65	650	20	50	175	1.8	10	TO-220F	1.7
FDCA25S65	650	25	100	175	1.6	10	TO-220F-2	1.7
FDCY10S65	650	10	50	175	1.8	10	TO-247 (Type: A)	6.4
FDCY20C65	650	20	50	175	1.8	10	TO-247 (Type: A)	6.4
FDCY25S65	650	25	100	175	1.6	10	TO-247 (Type: A)	6.4
FDCY50C65	650	50	100	175	1.6	10	TO-247 (Type: A)	6.4
FDCC10S65	650	10	50	175	1.8	10	T-Pack (S)	1.6
FDCC20C65	650	20	50	175	1.8	10	T-Pack (S)	1.6
FDCC25S65	650	25	100	175	1.6	10	T-Pack (S)	1.6
FDCA18S120	1200	18	90	175	1.7	10	TO-220F-2	1.7
FDCY18S120	1200	18	90	175	1.7	10	TO-247 (Type: A)	6.4
FDCW18T120	1200	18	90	175	1.7	10	TO-247-2 (Type: A)	6.0
FDCY36C120	1200	36	90	175	1.7	10	TO-247 (Type: A)	6.4

*1 Half sine wave $t_p=10\text{ms}$

*2 $V_R=V_{RRM}$



Automotive SiC-SBD 1G Series

SiC-SBD Series			TO-220-2	TO-220	TO-247 (Type: A)	T-Pack (S)
Chip	V_{RRM} (V)	I_F (A)				
Single	650	10	✓		✓	✓
		25	✓		✓	✓
	1200	18			✓	
Dual	650	20		✓	✓	✓
		50			✓	
	1200	36			✓	

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)		Package	Net mass Grams
	V_{RRM} Volts	I_F Amps.	I_{FSM}^{*1} Amps.		V_F max. Volts	I_{RRM}^{*2} max. μA		
FDCP10S65A	650	10	50	-55 to +175	1.8	5	TO-220-2	2.0
FDCY10S65A	650	10	50	-55 to +175	1.8	5	TO-247 (Type: A)	6.4
FDCC10S65A	650	10	50	-55 to +175	1.8	5	T-Pack (S)	1.6
FDCP20C65A	650	20	100	-55 to +175	1.8	5	TO-220	2.0
FDCY20C65A	650	20	100	-55 to +175	1.8	5	TO-247 (Type: A)	6.4
FDCC20C65A	650	20	100	-55 to +175	1.8	5	T-Pack (S)	1.6
FDCP25S65A	650	25	100	-55 to +175	1.7	10	TO-220-2	2.0
FDCY25S65A	650	25	100	-55 to +175	1.7	10	TO-247 (Type: A)	6.4
FDCC25S65A	650	25	100	-55 to +175	1.7	10	T-Pack (S)	1.6
FDCY50C65A	650	50	200	-55 to +175	1.7	10	TO-247 (Type: A)	6.4
FDCY18S120A	1200	18	90	-55 to +175	1.8	10	TO-247 (Type: A)	6.4
FDCY36C120A	1200	36	180	-55 to +175	1.8	10	TO-247 (Type: A)	6.4

*1 Half sine wave $t_p=10\text{ms}$

*2 $V_R=V_{RRM}$

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

3

Fuji Electric
Power
Semiconductors

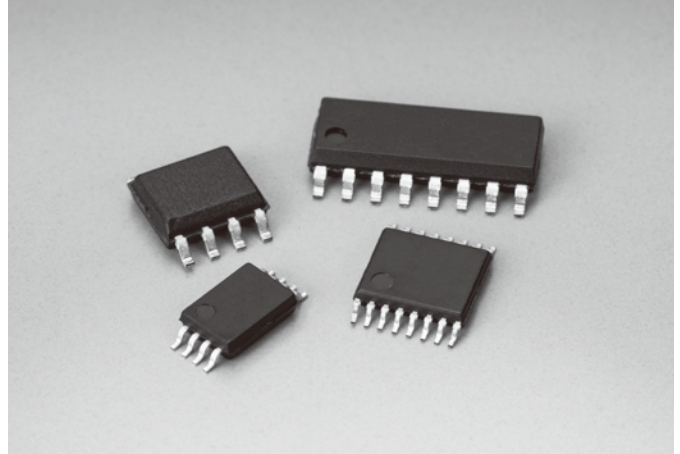
Power Supply Control ICs

Features of Power Supply Control ICs.....	78
AC/DC Power Supply Control ICs.....	80
Green mode PWM-ICs.....	80
General PWM-ICs.....	82
Green mode Quasi-resonant ICs.....	84
Power factor correction ICs.....	86
Current Resonant ICs.....	88
High and Low side driver ICs	89
DC/DC Power Supply Control ICs.....	90

Power Supply Control ICs



Fuji Electric offers a lineup of AC/DC and DC/DC power supply control ICs that support a variety of power circuits. These highly efficient, low-noise products with low standby power consumption are compatible with environmental regulations. Furthermore, many protection functions are built into the ICs themselves, allowing for smaller power circuits



Features of Power Supply Control ICs

Green Mode PWM-ICs

■ Features

- Built-in 500/650/750V withstand voltage start up circuit
- Green mode functions (Intermittent Switching/Linearly reduced switching frequency)
- Protect functions (Over voltage/Brown out/2 stage Over power)
- Low EMI noise by EMI jittering of frequency

Green Mode Quasi-resonant ICs

■ Features

- Built-in 500V withstand voltage start up circuit
- Green mode functions (Intermittent Switching/Linearly reduced switching frequency)
- Protect functions (Over voltage/Over load etc.)

Power Factor Correction ICs

■ Features

- Wide electric power range(From 75W to 1kW)
- Power factor ≥ 0.99
- Protect functions (FB Pin open short/Over voltage etc.)
- Improved power efficiency at light load by frequency reduction

Current Resonant ICs

■ Features

- Built-in High side driver
- Preventing capacitive region operation, Self-adjusting dead time function
- Protect functions (Over current/Over voltage/Over load/Over heat/Brown out)
- Green mode function (Intermittent switching)
- Realize 1 convertor circuit structure at world wide input power

High and Low side driver ICs

■ Features

- High robustness of negative transient voltage on VS pin
- Wide range supply voltage up to 30V (FA5650/5651)
- 3.3V logic compatible
- Built-in under voltage lockout
- Allowable offset supply voltage transient dV_s/dt up to 50kV/us
- High speed response: Turn on/off delay time 125ns (Typ) (FA5650/5651)

■ Part numbers

FA8A00N (example)

F		A		8		A	00	N	
Company Symbol		Control System		Series		Generation	Number	Package code	
F	Fuji	A	Analog	1	CRMPFC	A	Two-digit integer	N	SOP
				6	LLC	B			
				8	PWM	C			
						...			

FA5590N (example)

F		A		55		90	N	
Company Symbol		Control System		Series		Generation	Package code	
F	Fuji	A	Analog	3X	AC/DC DC/DC	Two-digit integer	M/N	SOP
				5X	AC/DC		V	TSSOP
				7X	DC/DC			
				13X	AC/DC			

AC/DC Power Supply Control ICs

Green mode PWM-ICs (Current mode)

Type Name	Duty	Input voltage	Frequency		Current sense	Over load protection	Over power protection	Over voltage protection	Built-in start up circuit	Green mode function	X-Cap discharge function							
		65kHz	100kHz															
With Brown out function																		
FA8A00N	83%	12 - 24V	✓		Positive	Auto-Recovery	2Stage (OPP ratio 1:1.4)	Latch	500V	Linearly frequency reduction Intermittent operation	✓							
FA8A40N				✓								Timer-latch						
FA8A01N			✓									Auto-Recovery						
FA8A41N				✓								Timer-latch						
FA8B16N		10 - 28V	✓			Auto-Recovery	2Stage (OPP ratio 1:1.5)											
FA8A27N			✓			Timer-latch	2Stage (OPP ratio 1:1.8)											
FA8A37N																		
FA8A39N																		
FA8A83N				10 - 24V		✓			Timer-latch			1Stage						
FA8A86N						✓			Auto-Recovery									
Without Brown out function																		
FA5680N	85%	11 - 24V	✓		Negative	Auto-Recovery			750V									
FA5681N			✓			Timer-latch												
FA8A60N	83%	10 - 24V	✓		Positive	Auto-Recovery	1Stage	Latch	500V	Linearly frequency reduction Intermittent operation	✓							
FA8A64N				✓								Timer-latch						
FA8A61N			✓									Auto-Recovery						
FA8A65N				✓								Timer-latch						
FA8A70N			✓									Auto-Recovery						
FA8A74N				✓								Timer-latch						
FA8A71N			✓				Auto-Recovery		2Stage			650V						
FA8A75N				✓			Timer-latch											
FA8A12N			✓				Auto-Recovery											
FA8A80N			✓				Timer-latch											
FA8A84N				✓			Auto-Recovery		1Stage									
FA8A81N			✓				Timer-latch											
FA8A85N				✓			Auto-Recovery											
FA8A90N			✓				Timer-latch											
FA8A94N				✓			Auto-Recovery											
FA8A91N			✓				Timer-latch											
FA8A87N			✓				Auto-Recovery											
FA8A95N				✓			Timer-latch											

PKG : SOP-8

GBT



Diode

 JSL

ers

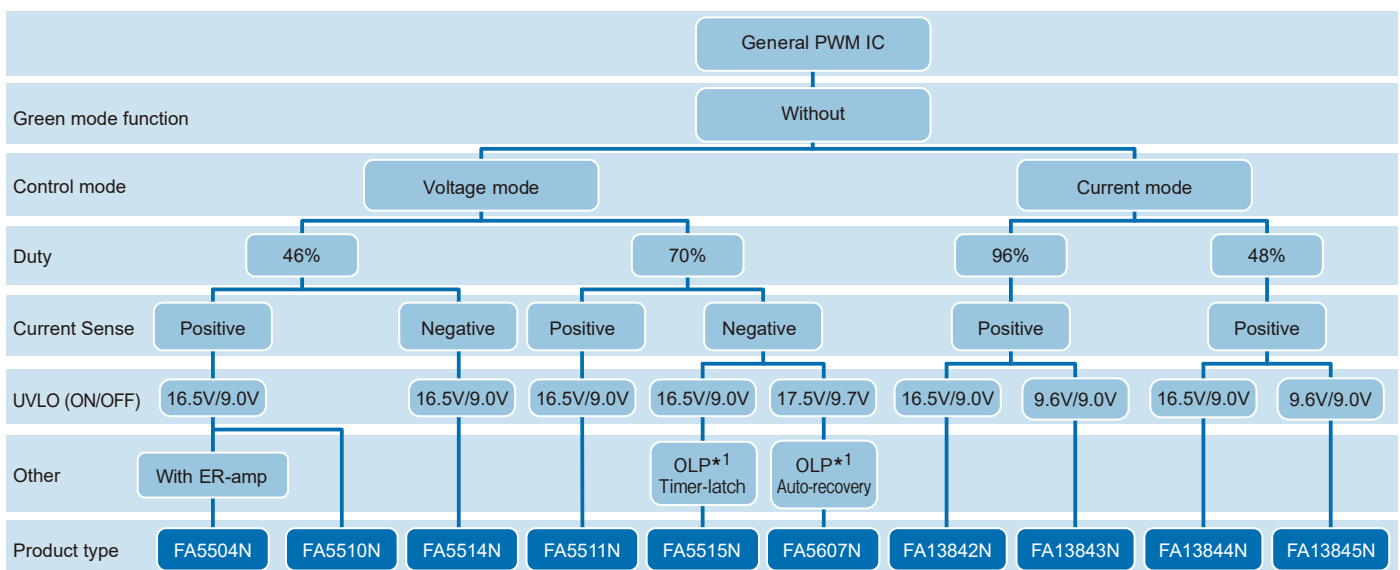
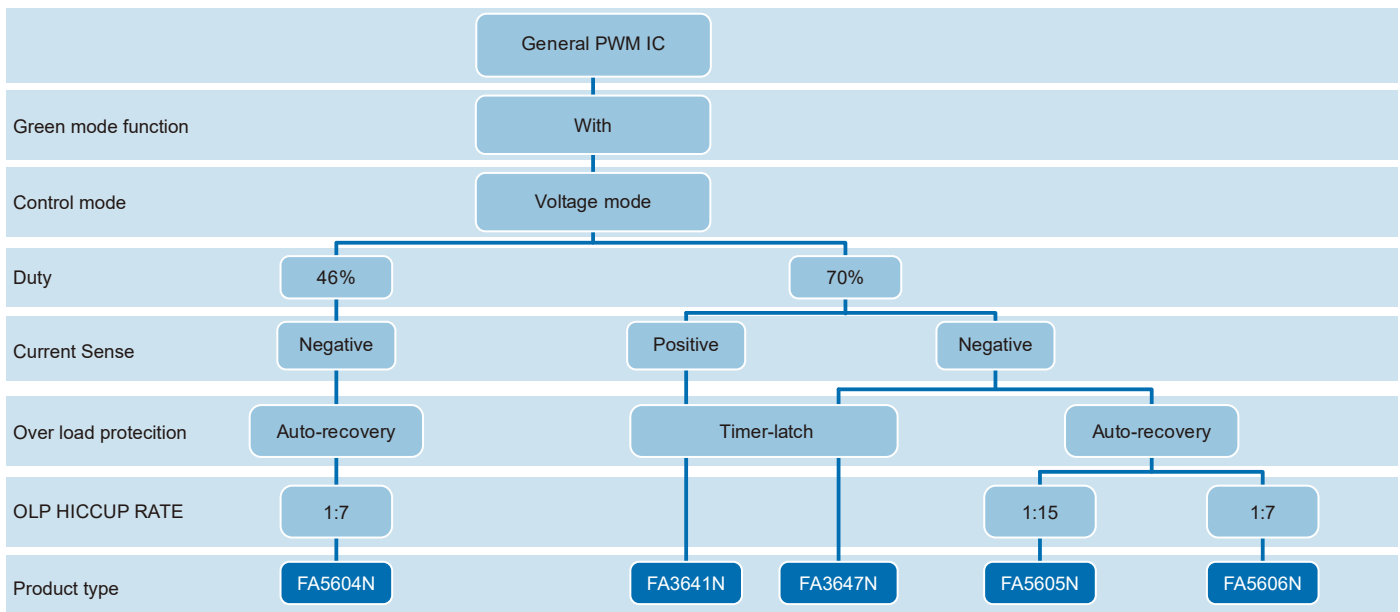


General PWM-ICs

Type Name	Control mode	Duty	Input voltage	Current sense	Over load protection	Over voltage protection	Under-voltage lockout (ON/OFF)	Remarks	
With Green mode function									
FA3641N	Voltage mode	70%	10 - 28V	Positive	Timer-latch		16.5V/9.0V	Frequency reduction at light load	
FA3647N				Negative				Frequency reduction at light load	
FA5604N		46%	10 - 30V	Negative	Auto-Recovery	Latch	17.5V/9.7V	Overcurrent limit correction function Frequency reduction start/stop FB voltage under light load 1.8V/1.95V	
FA5605N		70%						Overcurrent limit correction function Frequency reduction start/stop FB voltage under light load 1.55V/1.65V	
FA5606N									
Without Green mode function									
FA13842N	Current mode	96%	10 - 25V	Positive	-	-	16.5V/9.0V		
FA13843N							9.6V/9.0V		
FA13844N		48%						16.5V/9.0V	
FA13845N								9.6V/9.0V	
FA5504N	Voltage mode	46%	10 - 28V		Timer-latch	Latch	16.5V/9.0V	With error amplifier	
FA5510N									
FA5511N		70%							
FA5514N		46%							
FA5515N		70%		10 - 30V	Negative		Auto-Recovery		17.5V/9.7V
FA5607N									

PKG: "N":SOP-8
Frequency: Adjustable

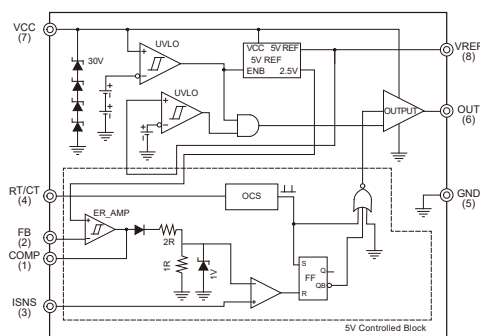
General PWM-ICs



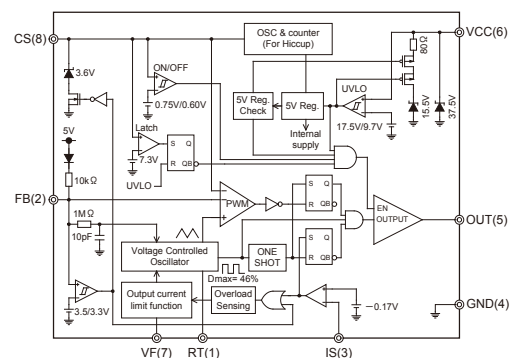
*1 OLP: Over Load Protection

Block diagram (Main model)

FA13842N



FA5604N

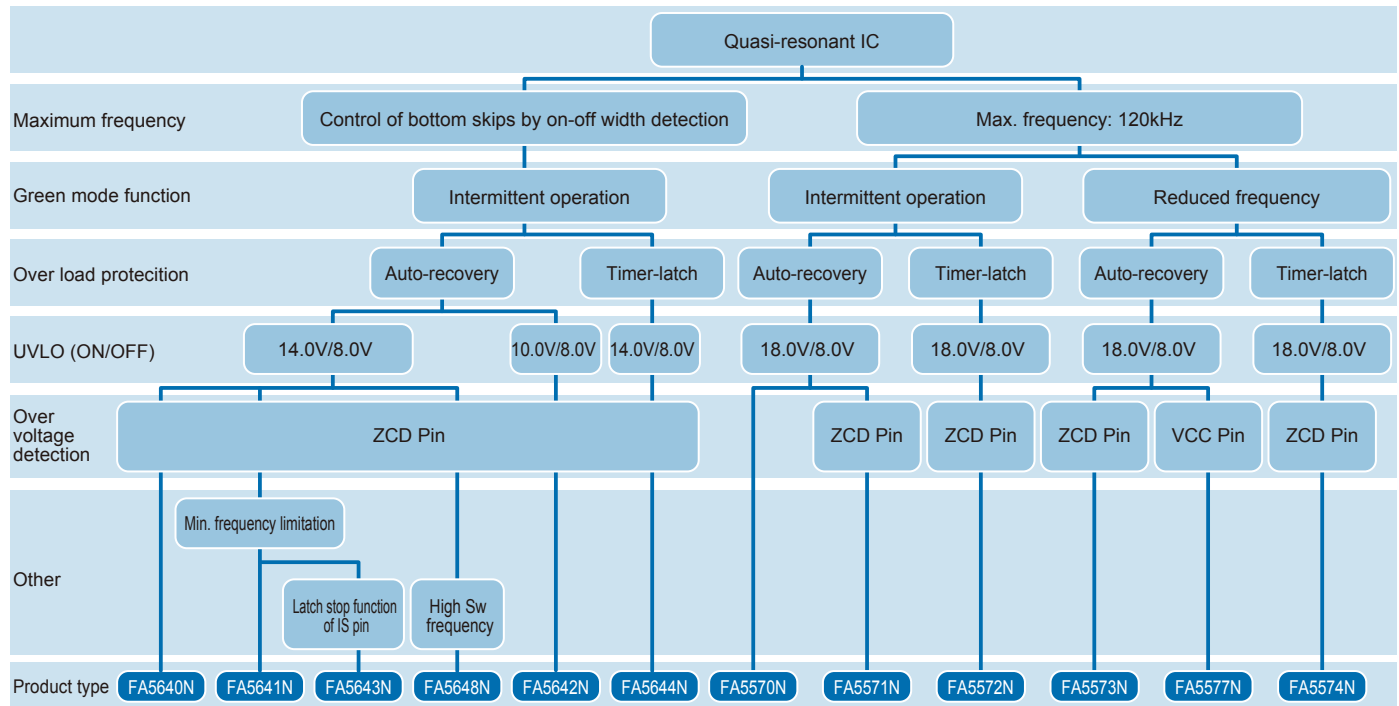


■ Green mode Quasi-resonant ICs (Current mode)

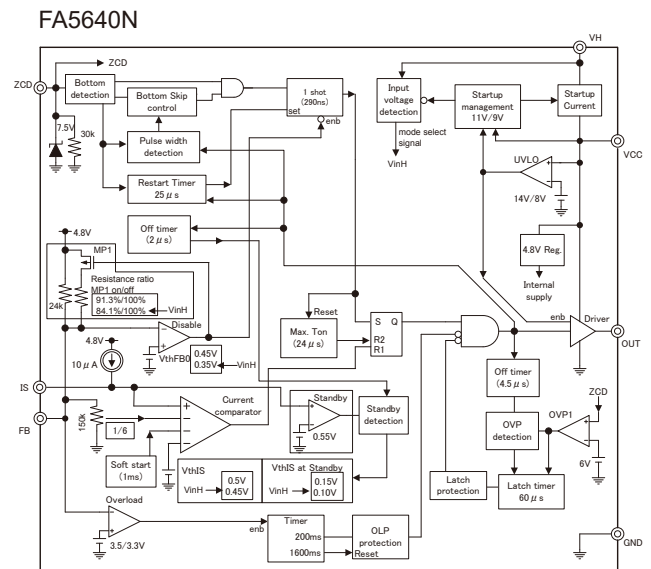
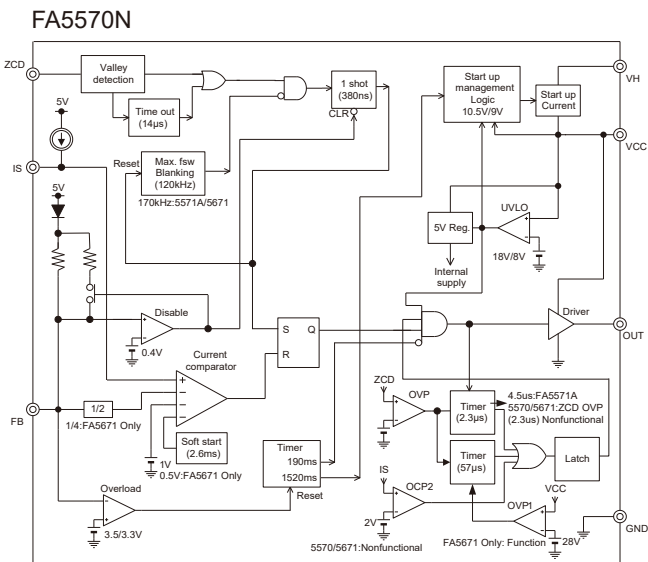
Type Name	Input voltage	Maximum frequency	Over load protection	Over voltage sense	Built-in start up circuit	Green mode function	Under-voltage lockout (ON/OFF)	Remarks
FA5570N	10 - 28V	Max. frequency limitation 120kHz	Auto-Recovery	—	500V	Intermittent operation	18V/8V	
FA5571N				ZCD Pin				Over voltage protection Latch
FA5572N			Timer-latch					
FA5573N			Auto-Recovery					
FA5574N			Timer-latch					
FA5577N			Auto-Recovery	VCC Pin				
FA5640N	11 - 26V	Bottom skip control by on-off width detection	Auto-Recovery	ZCD Pin	500V	Intermittent operation	14V/8V	
FA5641N								Min. frequency limitation
FA5642N							10V/8V	
FA5643N							Min. frequency limitation Latch stop function (IS pin)	
FA5644N			14V/8V					
FA5648N							For High SW frequency	

PKG: SOP-8

Green mode Quasi-resonant ICs



Block diagram (Main model)

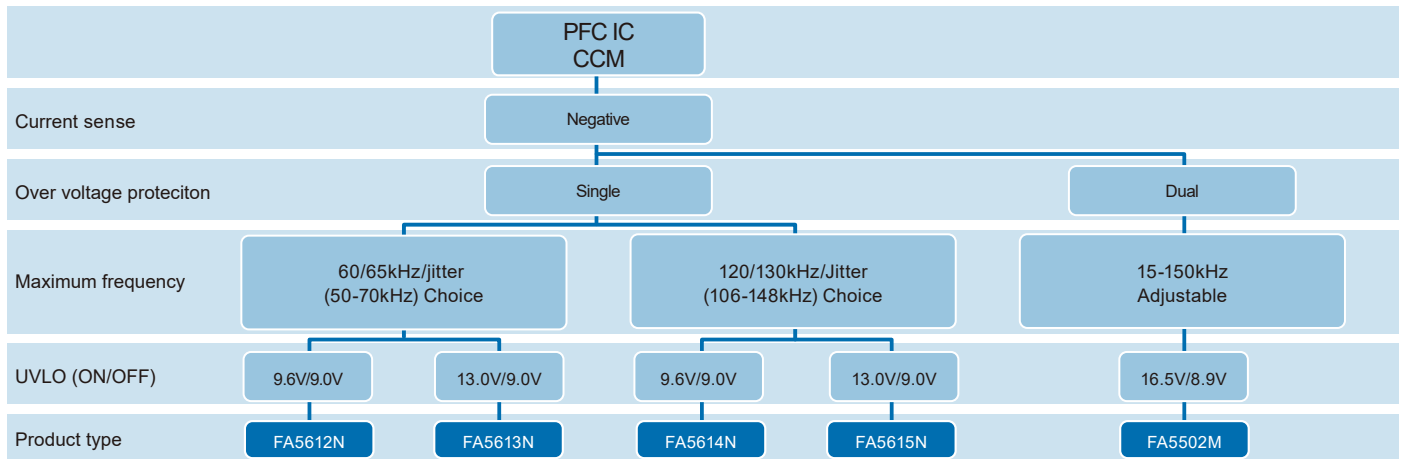
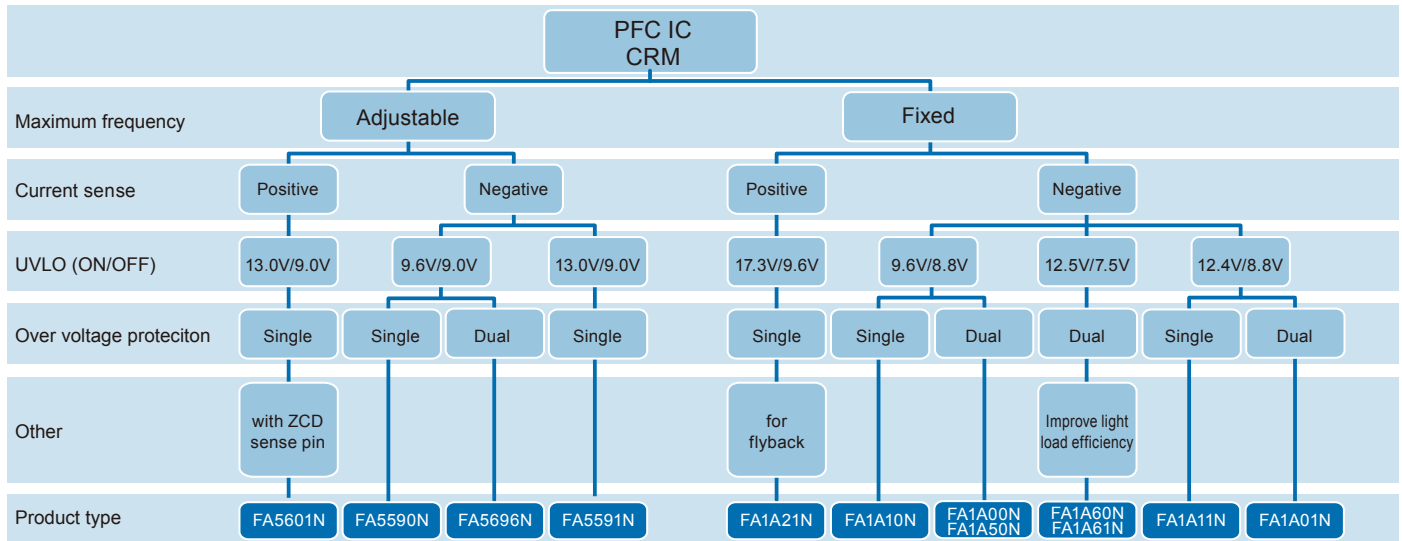


Power factor correction ICs

Type Name	Input voltage	Duty	Current sense	Under-voltage lockout (ON/OFF)	Frequency	Maximum frequency	Zero Current Detection	FB open short protection	Over voltage protection	Remarks		
CRM PFC												
FA5590N	10 - 26V	—	Negative	9.6V/9.0V	Self-oscillation	Adjustable	Current sense	✓	Voltage-Limit by Pulse width			
FA5591N				13.0V/9.0V								
FA1A10N				9.6V/8.8V								
FA1A11N				12.4V/8.8V								
FA1A50N				9.6V/8.8V								
FA1A60N				12.5V/7.5V		Fixed		Voltage-Limit by Pulse width and Voltage-Limit(OVP)	Improve light load efficiency Cooperate with FA6B19N/20N/22N			
FA1A61N			Improve transient response Cooperate with FA6B21N									
FA5696N			9.6V/9.0V	Adjustable	✓							
FA1A00N			9.6V/8.8V	Fixed								
FA1A01N			12.4V/8.8V									
FA5601N		Positive	13.0V/9.0V	Adjustable	Auxiliary-winding	—	Voltage-Limit by Pulse width					
FA1A21N			17.3V/9.6V	Fixed			Voltage-Limit (V _{CC})	For Flyback Over load protection				
CCM PFC												
FA5502M	10 - 28V	94%	Negative	16.5V/8.9V	Adjustable	150kHz	—	—	Voltage-Limit (OVP)			
FA5612N	10 - 26V			9.6V/9.0V	Choice 65/60kHz/jitter (50-70kHz)					✓	Voltage-Limit by Pulse width	Frequency diffusion function
FA5613N				13.0V/9.0V								
FA5614N	10 - 26V			9.6V/9.0V	Choice 130/120kHz/ jitter (106-148kHz)							
FA5615N				13.0V/9.0V								

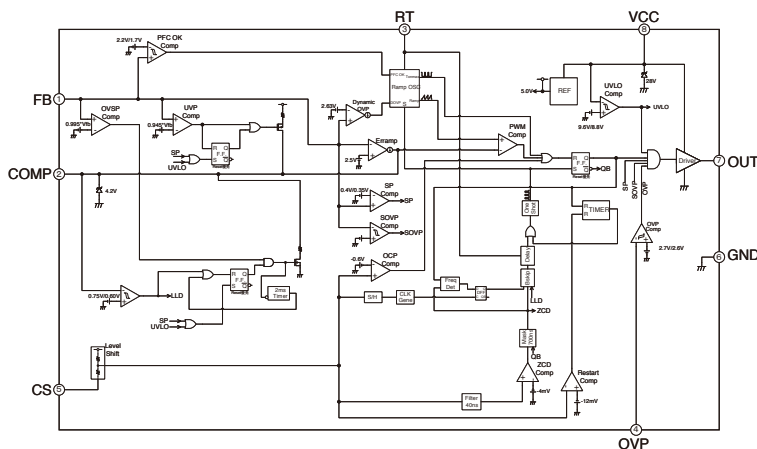
PKG: FA5502 "M":SOP-16(M), others are 8pin

Power factor correction ICs

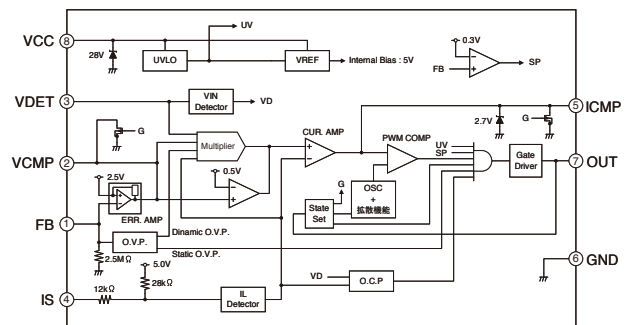


Block diagram (Main model)

FA1A50N



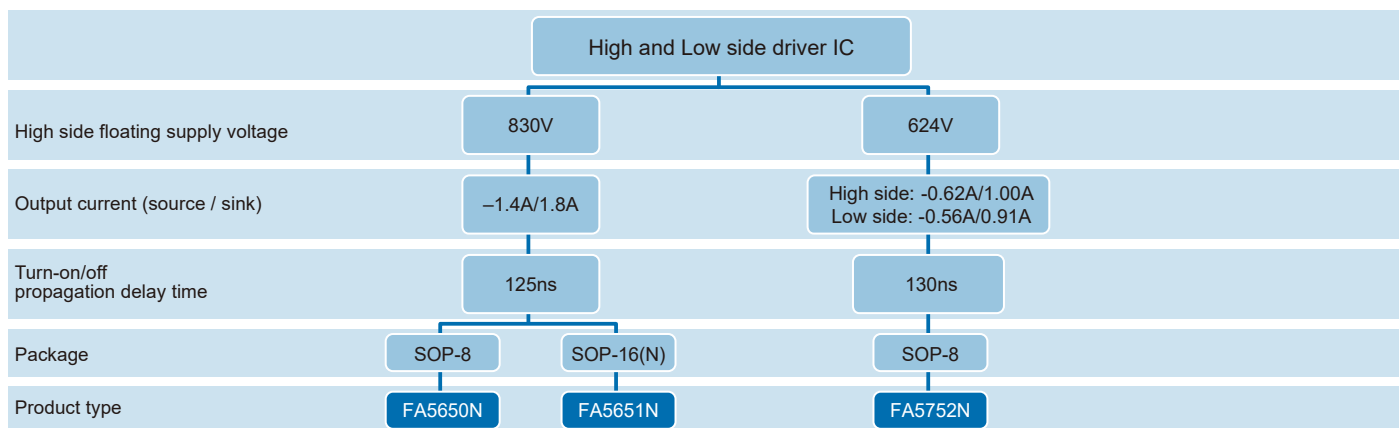
FA5612N, FA5613N, FA5614N, FA5615N



High and Low side driver ICs

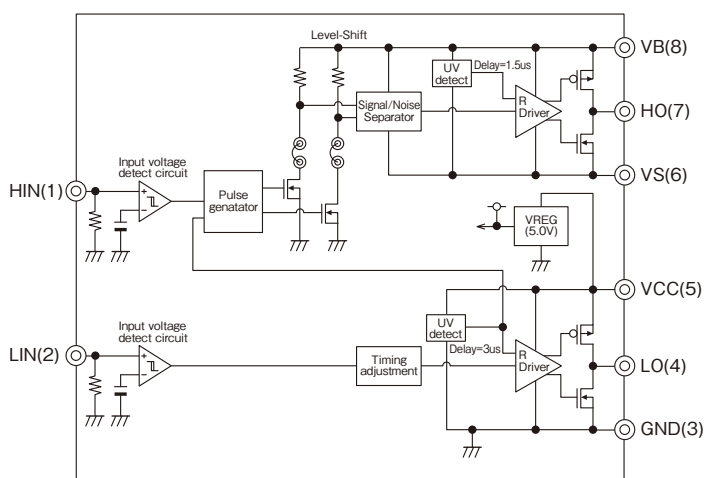
Type name	Absolute maximum ratings				Electrical characteristics				
	High side floating supply voltage	Maximum supply voltage	Output current source / sink	Maximum input frequency	Logic "1" / "0" Input voltage level (typ.)	Turn-on/off propagation delay time (typ.)	VCC and VBS supply under-voltage threshold (typ.)	Number of Input terminal	Package
FA5650N	830V	30V	-1.4A/1.8A	500kHz	Logic "1" 2.1V Logic "0" 1.1V	125ns	positive going 8.9V negative going 8.2V	2	SOP-8
FA5651N									SOP-16(N)
FA5752N	624V	24V	High side IHO: -0.62A/1.00A Low side ILO: -0.56A/0.91A		Logic "1" 2.1V Logic "0" 1.3V	130ns			SOP-8

High and Low side driver ICs

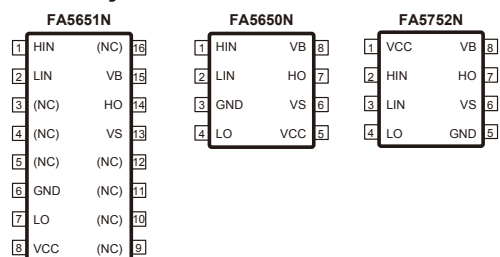


Block diagram (Main model)

FA5650N



Pin Layout

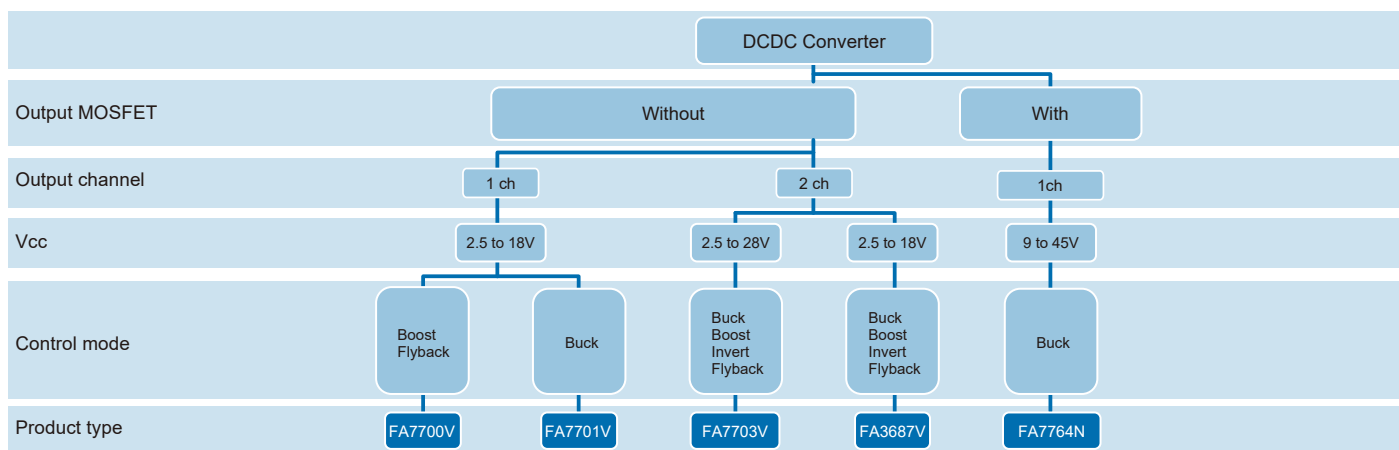


DC/DC Power Supply Control ICs

DC/DC Power Supply Control ICs

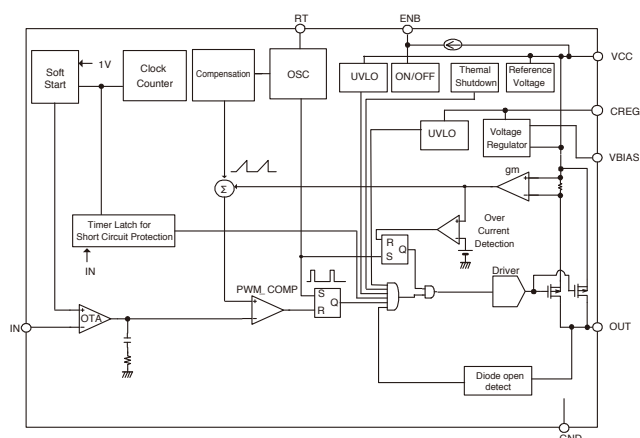
Type Name	Control mode				Output channel	Input voltage	Frequency	Reference Voltage	Operating Ambient Temperature	Output Current	Output MOSFET	Package
	Boost	Fly back	Buck	Inverting								
FA7700V	✓	✓			1	2.5 - 18V	50k - 1MHz	0.88V	-30 to +85°C	—	—	TSSOP-8
FA7701V			✓		1	2.5 - 18V	50k - 1MHz	0.88V	-30 to +85°C	—	—	TSSOP-8
FA7703V	✓	✓	✓	✓	2	2.5 - 28V	50k - 1MHz	1.0V	-30 to +85°C	—	—	TSSOP-16
FA3687V	✓	✓	✓	✓	2	2.5 - 18V	300k - 1.5MHz	1.0V	-30 to +85°C	—	—	TSSOP-16
FA7764N			✓		1	9 - 45V	30k - 400kHz	1.0V	-20 to +85°C	1.5A	With	SOP-8E

DC/DC Power Supply Control ICs



Block diagram (Main model)

FA7764N



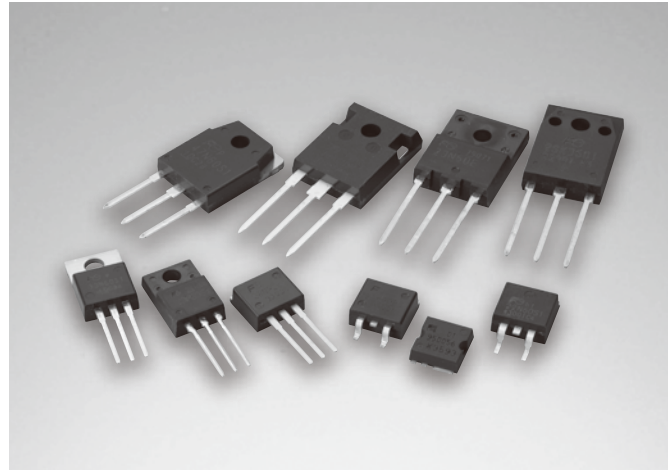
Power MOSFETs

MOSFET Super J MOS [®] S2 series	92
Features of SuperFAP-E ³ , E ^{3S} series.....	94
Features of SuperFAP-G series.....	94
Super J MOS [®] S2 series	96
Super J MOS [®] S2FD series (Built-in FRED type)	98
SuperFAP-E ³ series.....	99
SuperFAP-E ^{3S} Low Qg series.....	103
SuperFAP-G series.....	105
SuperFAP-G series (Built-in FRED type)	109
Trench Power MOSFET	110
Automotive Super J MOS [®] S2 series	111
Automotive Super J MOS [®] S2FD series	112
(Built-in FRED type)	
Automotive MOSFET	113
(Trench Power MOS, SuperFAP-E ^{3S})	
Automotive SuperFAP-E ^{3S} Low Qg series.....	114
(Built-in FRED type)	
Automotive IPS series (Intelligent Power Switches).....	114

Power MOSFETs



Fuji Electric has a lineup of power MOSFETs ranging from medium to high-voltage types with features such as low power loss, low noise, and low on-resistance. The "Super J-MOS[®]" Series uses superjunction technology, and was developed primarily for models with a withstand voltage of 600 V.

MOSFET Super J MOS[®] S2 series

■ Concept

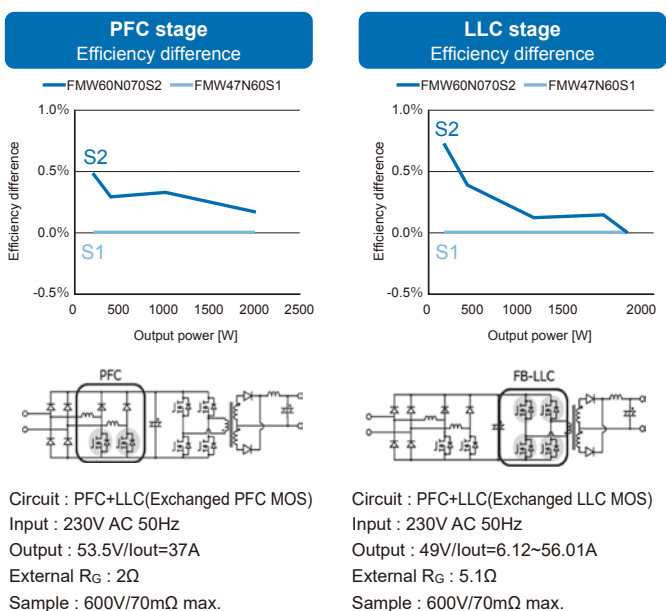
Superjunction technology has much improved trade-off characteristic between On-resistance and Breakdown voltage. Super J MOS[®] S2 has the same turn-off loss and turn-off dv/dt capabilities at conventional Super J MOS[®] S1. As a result, It contributes to high efficiency and miniaturization of power supply.

■ Applications

PFC or PWM converter for Server, PC, PCS, UPS, LCD-TV, Lighting and Standard power supply

■ Features & Benefit of Super J MOS[®] S2 series

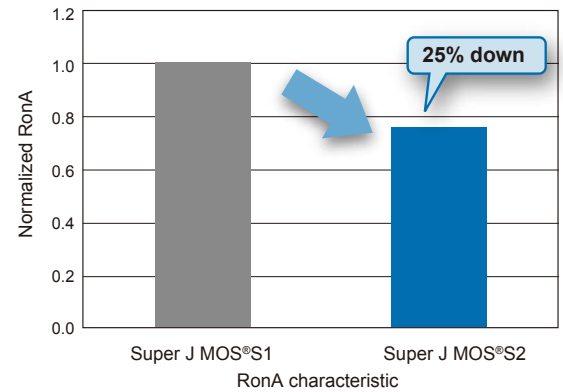
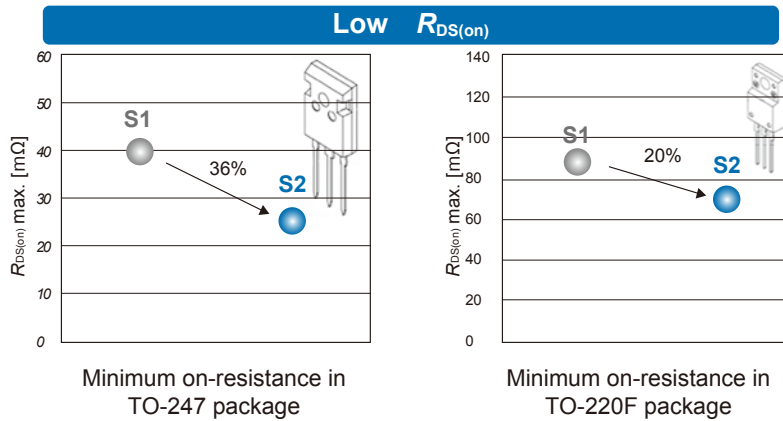
Feature	Benefit
Low on-state resistance Low switching loss	➔ High efficiency High power density
Low gate charge (Q_G) Low energy stored in output capacitance (E_{OSS})	➔ High efficiency at low load capacitance
Easy to use (more controllable dv/dt by R_G and Low V_{DS} surge)	➔ Easy to design
100% avalanche tested	➔ High reliability

■ Benefit (Efficiency) of Super J MOS[®] S2 series

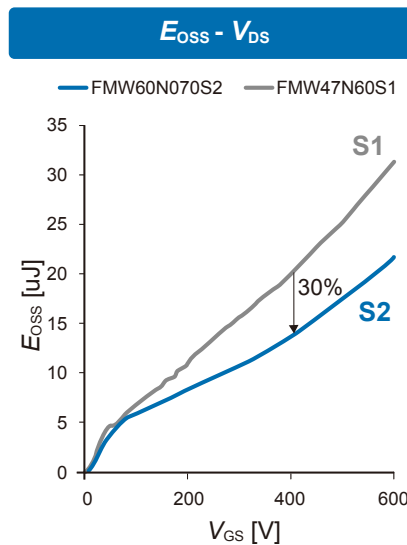
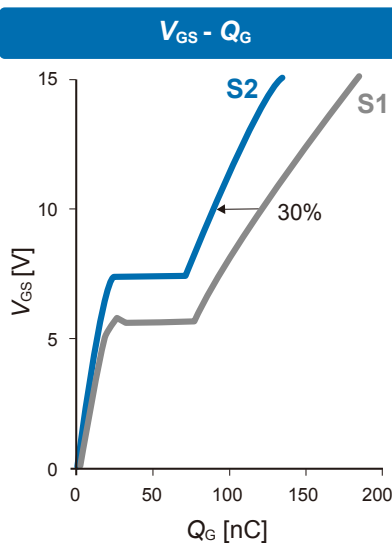
Super J MOS[®] is registered trademarks of Fuji Electric.

■ Features of Super J MOS[®] S2 series

- Low $R_{DS(on)}$ • A 25% lower than our conventional MOSFET (Super J MOS[®] S1)
- Due to low $R_{DS(on)}$, Selectable smaller package
ex) 600V/0.07Ω/TO-3P → 600V/0.07Ω/TO-220F



- Low Q_G 30% lower than our conventional MOSFET (Super J MOS[®] S1)
- Low E_{oss} 30% lower than our conventional MOSFET (Super J MOS[®] S1)

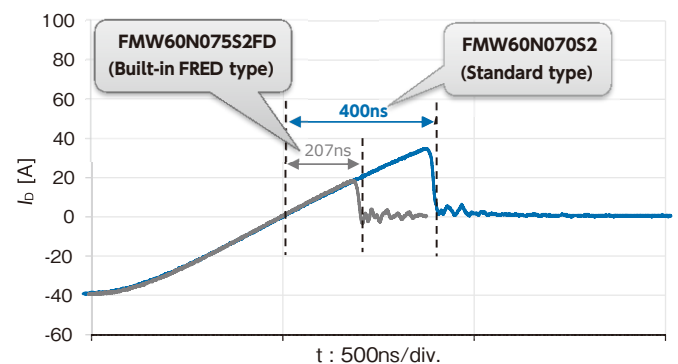


■ Features of Super J MOS[®] S2FD series (Built-in FRED type)

- t_{rr} of S2FD is 50% faster than S2
- High diode recovery ruggedness (High $-di/dt$ ruggedness)
- Guaranteed avalanche robustness

■ Applications

For resonant switching topologies in applications like UPS, Server, Telecom, LED lighting, Power conditioner system and Power supply.



Conditions : $V_{DD}=400V$, $I_{DR}=39.4A$, $-di/dt=100A/\mu s$, $T_{ch}=25^\circ C$

Built-in diode recovery wave form

Super J MOS[®] is registered trademarks of Fuji Electric.

Features of SuperFAP-E³, E^{3S} series

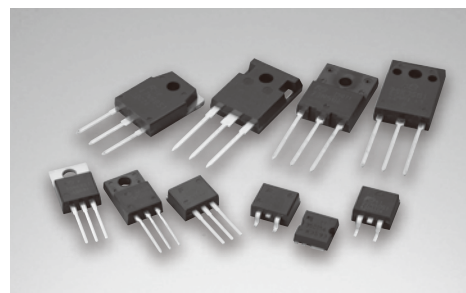
■ Concept

The second generation Quasi-Planer Junction technology copes with both low loss/noise and usability.

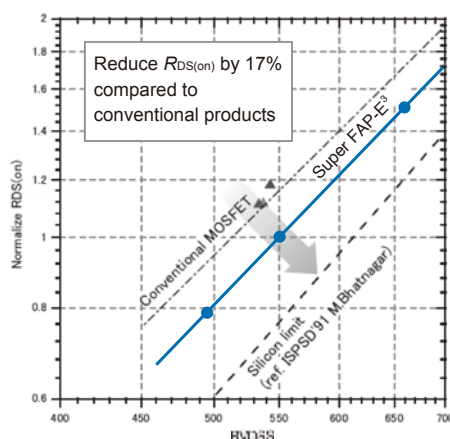
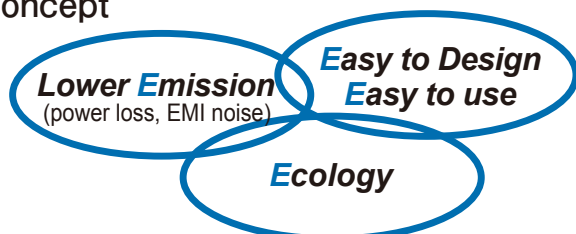
And this technology lets us achieve high performance for power supply's circuit design.

■ Features

- Coping with both low loss and low noise
- Low $R_{DS(on)}$
- High controllability of gate resistance during switching
- Low V_{GS} ringing waveform during switching
- Narrow band of the gate threshold voltage ($3.0 \pm 0.5V$)
- High avalanche durability



Concept



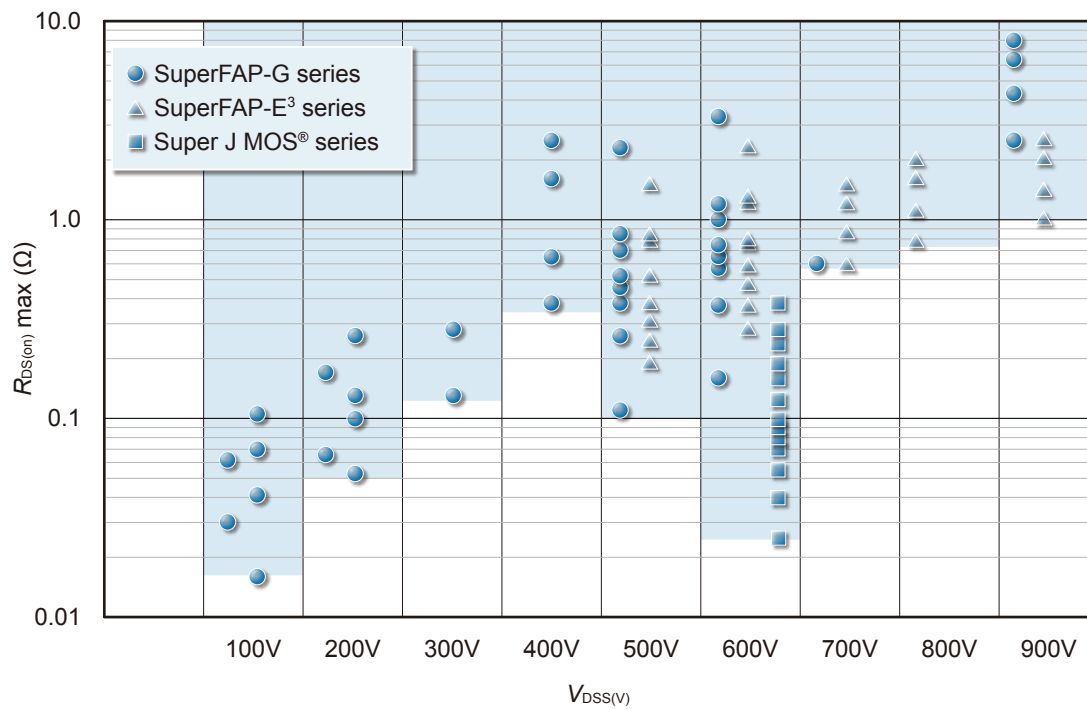
Features of SuperFAP-G series

The Quasi-Planer Junction technology achieve low $R_{DS(on)}$ and low switching loss (low Q_{GD}).

■ Features

- Low turn off loss 75% lower than our conventional type
- Low Gate charge 60% lower than our conventional type
- High avalanche durability
- Due to low $R_{DS(on)}$, Selectable smaller package
ex) 500V/0.4Ω/TO-3P → 500V/0.38Ω/TO-220

Series map (Except for Automotive)



Part numbers

FMV60N190S2 (example)

F	M	V	60	N	190	S2
Company Symbol	Device code	Package code	Voltage	Polarity	Ron(mΩ)	Series
Fuji	M MOSFET	C T-Pack (S)	×1/10	N N-ch	×1	S2 Super J MOS® 2nd Gen.
		H TO-3P				S2FD Super J MOS® 2nd Gen. (FRED)
		L DFN8x8				S2A Super J MOS® 2nd Gen. for Automotive
		P TO-220				S2FDA Super J MOS® 2nd Gen. (FRED) for Automotive
		V TO-220F (SLS)				
		Y TO-247 (Type: A)				
		W TO-247 (Type: B)				

FMV20N50ES (example)

F	M	V	20	N	50	ES
Company Symbol	Device code	Package code	Current	Polarity	Voltage	Series
Fuji	M MOSFET	A TO-220F	×1	N N-ch	×1/10	E SuperFAP-E³
		C T-Pack (S)				ES SuperFAP-E³S
		H TO-3P				G SuperFAP-G
		I T-Pack (L)				GF SuperFAP-G (FRED)
		P TO-220				T2 Trench
		R TO-3PF				R 3G-Trench
		V TO-220F (SLS)				
		Y TO-247 (Type: A)				
		W TO-247 (Type: B)				

Super J MOS® is registered trademarks of Fuji Electric.

Letter symbols

V_{DS} : Drain-source voltage
 I_D : Continuous drain current
 $I_D(\text{pulse})$: Pulsed drain current
 $R_{DS(on)}$: Drain-source on-state resistance

P_{tot} : Maximum power dissipation
 V_{GS} : Gate-source voltage
 $V_{GS(th)}$: Gate threshold voltage
 Q_G : Total gate charge

Super J MOS[®] S2 series

Low-on resistance, low switching noise and low switching loss

Super J MOS [®] S2 series			TO-220	TO-220F (SLS)	TO-3P (Q)	TO-247 (Type: B)
						
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)				
600	0.3800	10.0	✓	✓		
	0.2800	13.0	✓	✓	✓	
	0.1900	20.0	✓	✓	✓	✓
	0.1600	23.9	✓	✓		✓
	0.1250	30.1	✓	✓		✓
	0.0990	38.1	✓	✓		✓
	0.0880	42.3	✓	✓		✓
	0.0790	47.9	✓	✓		✓
	0.0700	53.2		✓		✓
	0.0550	64.4				✓
	0.0400	77.5				✓
	0.0254	95.5				✓

600V class

Device type	V_{DS} Volts	I_D Amps.	I_D (pulse) Amps.	$R_{DS(on)}$ max. Ohms	P_{tot} Watts	V_{GS} Volts	$V_{GS(th)}$ Volts	Q_G typ. nC	Package	Net mass Grams
FMP60N380S2	600	10.0	32.4	0.3800	62	30	3.0±0.5	27.5	TO-220	2.0
FMV60N380S2	600	10.0	32.4	0.3800	20	30	3.0±0.5	27.5	TO-220F (SLS)	1.7
FMP60N280S2	600	13.0	41.6	0.2800	75	30	3.0±0.5	33	TO-220	2.0
FMV60N280S2	600	13.0	41.6	0.2800	26	30	3.0±0.5	33	TO-220F (SLS)	1.7
FMH60N280S2	600	13.0	41.6	0.2800	65	30	3.0±0.5	33	TO-3P (Q)	5.0
FMP60N190S2	600	20.0	62.0	0.1900	113	30	3.0±0.5	46	TO-220	2.0
FMV60N190S2	600	20.0	62.0	0.1900	38	30	3.0±0.5	46	TO-220F (SLS)	1.7
FMH60N190S2	600	20.0	62.0	0.1900	94	30	3.0±0.5	46	TO-3P (Q)	5.0
FMW60N190S2	600	20.0	62.0	0.1900	94	30	3.0±0.5	46	TO-247 (Type: B)	6.0
FMP60N160S2	600	23.9	71.6	0.1600	127	30	4.0±0.5	43	TO-220	2.0
FMV60N160S2	600	23.9	71.6	0.1600	45	30	4.0±0.5	43	TO-220F (SLS)	1.7
FMW60N160S2	600	23.9	71.6	0.1600	110	30	4.0±0.5	43	TO-247 (Type: B)	6.0
FMP60N125S2	600	30.1	90.8	0.1250	160	30	4.0±0.5	53	TO-220	2.0
FMV60N125S2	600	30.1	90.8	0.1250	57	30	4.0±0.5	53	TO-220F (SLS)	1.7
FMW60N125S2	600	30.1	90.8	0.1250	140	30	4.0±0.5	53	TO-247 (Type: B)	6.0
FMP60N099S2	600	38.1	117.0	0.0990	210	30	4.0±0.5	65	TO-220	2.0
FMV60N099S2	600	38.1	117.0	0.0990	75	30	4.0±0.5	65	TO-220F (SLS)	1.7
FMW60N099S2	600	38.1	117.0	0.0990	185	30	4.0±0.5	65	TO-247 (Type: B)	6.0

Super J MOS[®] is registered trademarks of Fuji Electric.

■ 600V class

Device type	V_{DS}	I_D	I_D (pulse)	$R_{DS(on)}$ max.	P_{tot}	V_{GS}	$V_{GS(th)}$	Q_G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
FMP60N088S2	600	42.3	131	0.0880	235	30	4.0±0.5	72	TO-220	2.0
FMV60N088S2	600	42.3	131	0.0880	85	30	4.0±0.5	72	TO-220F (SLS)	1.7
FMW60N088S2	600	42.3	131	0.0880	205	30	4.0±0.5	72	TO-247 (Type: B)	6.0
FMP60N079S2	600	47.9	148	0.0790	270	30	4.0±0.5	80	TO-220	2.0
FMV60N079S2	600	47.9	148	0.0790	95	30	4.0±0.5	80	TO-220F (SLS)	1.7
FMW60N079S2	600	47.9	148	0.0790	235	30	4.0±0.5	80	TO-247 (Type: B)	6.0
FMV60N070S2	600	53.2	158	0.0700	110	30	4.0±0.5	90	TO-220F (SLS)	1.7
FMW60N070S2	600	53.2	158	0.0700	270	30	4.0±0.5	90	TO-247 (Type: B)	6.0
FMW60N055S2	600	64.4	200	0.0550	340	30	4.0±0.5	110	TO-247 (Type: B)	6.0
FMW60N040S2	600	77.5	265	0.0400	435	30	4.0±0.5	147	TO-247 (Type: B)	6.0
FMW60N025S2	600	95.5	286.5	0.0254	575	30	4.0±0.5	222	TO-247 (Type: B)	6.0

Super J MOS[®] is registered trademarks of Fuji Electric.

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

Super J MOS[®] S2FD series (Built-in FRED type)

Low-on resistance, low switching noise and low switching loss

Super J MOS® S2FD series (Built-in FRED type)			TO-220	TO-220F (SLS)	TO-247 (Type: B)	DFN8x8
						
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)				
600	0.191	22.7				✓
	0.170	23.9	✓	✓	✓	
	0.150	28.7				✓
	0.133	30.1	✓	✓	✓	
	0.118	37.1				✓
	0.105	38.1	✓	✓	✓	
	0.104	41.3				✓
	0.094	42.3	✓	✓	✓	
	0.093	42.3				✓
	0.084	47.9	✓	✓	✓	
	0.075	53.2		✓	✓	
	0.059	64.4			✓	
	0.043	77.5			✓	
	0.027	95.5			✓	

600V class

Device type	V_{DS} Volts	I_D Amps.	I_D (pulse) Amps.	$R_{DS(on)}$ max. Ohms	P_{tot} Watts	V_{GS} Volts	$V_{GS(th)}$ Volts	Q_G typ. nC	t_{rr} typ. ns	Package	Net mass Grams
FML60N191S2FD	600	22.7	66	0.191	127	30	4.0±1.0	48	150	DFN8x8	0.2
FMP60N170S2FD	600	23.9	71.6	0.170	127	30	4.0±1.0	48	150	TO-220	2.0
FMV60N170S2FD	600	23.9	71.6	0.170	45	30	4.0±1.0	48	150	TO-220F (SLS)	1.7
FMW60N170S2FD	600	23.9	71.6	0.170	110	30	4.0±1.0	48	150	TO-247 (Type: B)	6.0
FML60N150S2FD	600	28.7	83.6	0.150	159	30	4.0±1.0	59	160	DFN8x8	0.2
FMP60N133S2FD	600	30.1	90.8	0.133	160	30	4.0±1.0	59	160	TO-220	2.0
FMV60N133S2FD	600	30.1	90.8	0.133	57	30	4.0±1.0	59	160	TO-220F (SLS)	1.7
FMW60N133S2FD	600	30.1	90.8	0.133	140	30	4.0±1.0	59	160	TO-247 (Type: B)	6.0
FML60N118S2FD	600	37.1	108	0.118	208	30	4.0±1.0	75	174	DFN8x8	0.2
FMP60N105S2FD	600	38.1	117	0.105	210	30	4.0±1.0	75	174	TO-220	2.0
FMV60N105S2FD	600	38.1	117	0.105	75	30	4.0±1.0	75	174	TO-220F (SLS)	1.7
FMW60N105S2FD	600	38.1	117	0.105	185	30	4.0±1.0	75	174	TO-247 (Type: B)	6.0
FML60N104S2FD	600	41.3	120.4	0.104	232	30	4.0±1.0	83	185	DFN8x8	0.2
FMP60N094S2FD	600	42.3	131	0.094	235	30	4.0±1.0	83	185	TO-220	2.0
FMV60N094S2FD	600	42.3	131	0.094	85	30	4.0±1.0	83	185	TO-220F (SLS)	1.7
FMW60N094S2FD	600	42.3	131	0.094	205	30	4.0±1.0	83	185	TO-247 (Type: B)	6.0
FML60N093S2FD	600	42.3	125.6	0.093	263	30	4.0±1.0	93	190	DFN8x8	0.2
FMP60N084S2FD	600	47.9	148	0.084	270	30	4.0±1.0	93	190	TO-220	2.0
FMV60N084S2FD	600	47.9	148	0.084	95	30	4.0±1.0	93	190	TO-220F (SLS)	1.7
FMW60N084S2FD	600	47.9	148	0.084	235	30	4.0±1.0	93	190	TO-247 (Type: B)	6.0
FMV60N075S2FD	600	53.2	158	0.075	110	30	4.0±1.0	97	207	TO-220F (SLS)	1.7
FMW60N075S2FD	600	53.2	158	0.075	270	30	4.0±1.0	97	207	TO-247 (Type: B)	6.0
FMW60N059S2FD	600	64.4	200	0.059	340	30	4.0±1.0	129	215	TO-247 (Type: B)	6.0
FMW60N043S2FD	600	77.5	265	0.043	435	30	4.0±1.0	177	250	TO-247 (Type: B)	6.0
FMW60N027S2FD	600	95.5	286.5	0.027	575	30	4.0±1.0	256	288	TO-247 (Type: B)	6.0

Super J MOS[®] is registered trademarks of Fuji Electric.

SuperFAP-E³ series

Low-on resistance and low switching noise

SuperFAP-E ³ series			TO-220	TO-220F (SLS)	TO-3P (Q)	TO-3PF	T-Pack (L)	T-Pack (S)
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)						
500	1.5	5	✓	✓			✓	✓
	0.85	6.5	✓	✓			✓	✓
	0.79	7.5	✓	✓				
	0.52	12	✓	✓			✓	✓
	0.38	16	✓	✓	✓		✓	✓
	0.31	20	✓	✓	✓		✓	✓
	0.245	23		✓	✓	✓		
	0.19	28			✓	✓		
600	2.3	3	✓	✓			✓	✓
	1.3	5.5	✓	✓			✓	✓
	1.2	6	✓	✓				
	0.79	10	✓	✓			✓	✓
	0.75	11	✓	✓			✓	✓
	0.58	13	✓	✓			✓	✓
	0.47	16	✓	✓			✓	✓
	0.365	19		✓	✓	✓		
	0.28	23			✓	✓		
650	1.47	7		✓				
	0.97	9		✓				
700	1.5	7		✓	✓			
	1.2	9		✓	✓			
	0.85	11		✓	✓			
	0.59	15		✓				
800	2	6		✓	✓		✓	✓
	1.6	8		✓	✓		✓	✓
	1.1	10		✓	✓			
	0.78	13		✓	✓			
900	2.5	6		✓	✓		✓	✓
	2	7		✓	✓		✓	✓
	1.4	9		✓	✓	✓		
	1	11		✓	✓	✓		

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

SuperFAP-E³ series

500V class

Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS(th)}	Q _G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
FMP05N50E	500	5	20	1.5	60	30	3±0.5	21	TO-220	2.0
FMV05N50E	500	5	20	1.5	21	30	3±0.5	21	TO-220F (SLS)	1.7
FMI05N50E	500	5	20	1.5	60	30	3±0.5	21	T-Pack (L)	1.6
FMC05N50E	500	5	20	1.5	60	30	3±0.5	21	T-Pack (S)	1.6
FMP07N50E	500	6.5	26	0.85	90	30	3±0.5	32	TO-220	2.0
FMV07N50E	500	6.5	26	0.85	32	30	3±0.5	32	TO-220F (SLS)	1.7
FMI07N50E	500	6.5	26	0.85	90	30	3±0.5	32	T-Pack (L)	1.6
FMC07N50E	500	6.5	26	0.85	90	30	3±0.5	32	T-Pack (S)	1.6
FMP08N50E	500	7.5	30	0.79	105	30	3±0.5	35	TO-220	2.0
FMV08N50E	500	7.5	30	0.79	37	30	3±0.5	35	TO-220F (SLS)	1.7
FMP12N50E	500	12	48	0.52	165	30	3±0.5	60	TO-220	2.0
FMV12N50E	500	12	48	0.52	60	30	3±0.5	60	TO-220F (SLS)	1.7
FMI12N50E	500	12	48	0.52	165	30	3±0.5	60	T-Pack (L)	1.6
FMC12N50E	500	12	48	0.52	165	30	3±0.5	60	T-Pack (S)	1.6
FMP16N50E	500	16	64	0.38	225	30	3±0.5	60	TO-220	2.0
FMV16N50E	500	16	64	0.38	80	30	3±0.5	60	TO-220F (SLS)	1.7
FMI16N50E	500	16	64	0.38	225	30	3±0.5	60	T-Pack (L)	1.6
FMC16N50E	500	16	64	0.38	225	30	3±0.5	60	T-Pack (S)	1.6
FMH16N50E	500	16	64	0.38	195	30	3±0.5	60	TO-3P (Q)	5.1
FMP20N50E	500	20	80	0.31	270	30	3±0.5	77	TO-220	2.0
FMV20N50E	500	20	80	0.31	95	30	3±0.5	77	TO-220F (SLS)	1.7
FMI20N50E	500	20	80	0.31	270	30	3±0.5	77	T-Pack (L)	1.6
FMC20N50E	500	20	80	0.31	270	30	3±0.5	77	T-Pack (S)	1.6
FMH20N50E	500	20	80	0.31	235	30	3±0.5	77	TO-3P (Q)	5.1
FMV23N50E	500	23	92	0.245	130	30	3±0.5	93	TO-220F (SLS)	1.7
FMH23N50E	500	23	92	0.245	315	30	3±0.5	93	TO-3P (Q)	5.1
FMR23N50E	500	23	92	0.245	150	30	3±0.5	93	TO-3PF	6.0
FMH28N50E	500	28	112	0.19	400	30	3±0.5	130	TO-3P (Q)	5.1
FMR28N50E	500	28	112	0.19	200	30	3±0.5	130	TO-3PF	6.0

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

SuperFAP-E³ series

600–800Vclass

Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS(th)}	Q _G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
FMP03N60E	600	3	12	2.3	60	30	3±0.5	21.5	TO-220	2.0
FMV03N60E	600	3	12	2.3	21	30	3±0.5	21.5	TO-220F (SLS)	1.7
FMI03N60E	600	3	12	2.3	60	30	3±0.5	21.5	T-Pack (L)	1.6
FMC03N60E	600	3	12	2.3	60	30	3±0.5	21.5	T-Pack (S)	1.6
FMP05N60E	600	5.5	22	1.3	90	30	3±0.5	33	TO-220	2.0
FMV05N60E	600	5.5	22	1.3	32	30	3±0.5	33	TO-220F (SLS)	1.7
FMI05N60E	600	5.5	22	1.3	90	30	3±0.5	33	T-Pack (L)	1.6
FMC05N60E	600	5.5	22	1.3	90	30	3±0.5	33	T-Pack (S)	1.6
FMP06N60E	600	6	24	1.2	105	30	3±0.5	35	TO-220	2.0
FMV06N60E	600	6	24	1.2	37	30	3±0.5	35	TO-220F (SLS)	1.7
FMP10N60E	600	10	40	0.79	165	30	3±0.5	47	TO-220	2.0
FMV10N60E	600	10	40	0.79	60	30	3±0.5	47	TO-220F (SLS)	1.7
FMI10N60E	600	10	40	0.79	165	30	3±0.5	47	T-Pack (L)	1.6
FMC10N60E	600	10	40	0.79	165	30	3±0.5	47	T-Pack(S)	1.6
FMP11N60E	600	11	44	0.75	180	30	3±0.5	48.5	TO-220	2.0
FMV11N60E	600	11	44	0.75	65	30	3±0.5	48.5	TO-220F (SLS)	1.7
FMI11N60E	600	11	44	0.75	180	30	3±0.5	48.5	T-Pack (L)	1.6
FMC11N60E	600	11	44	0.75	180	30	3±0.5	48.5	T-Pack (S)	1.6
FMP13N60E	600	13	52	0.58	225	30	3±0.5	60	TO-220	2.0
FMV13N60E	600	13	52	0.58	80	30	3±0.5	60	TO-220F (SLS)	1.7
FMI13N60E	600	13	52	0.58	225	30	3±0.5	60	T-Pack (L)	1.6
FMC13N60E	600	13	52	0.58	225	30	3±0.5	60	T-Pack (S)	1.6
FMP16N60E	600	16	64	0.47	270	30	3±0.5	76	TO-220	2.0
FMV16N60E	600	16	64	0.47	95	30	3±0.5	76	TO-220F (SLS)	1.7
FMI16N60E	600	16	64	0.47	270	30	3±0.5	76	T-Pack (L)	1.6
FMC16N60E	600	16	64	0.47	270	30	3±0.5	76	T-Pack (S)	1.6
FMV19N60E	600	19	76	0.365	130	30	3±0.5	105	TO-220F (SLS)	1.7
FMH19N60E	600	19	76	0.365	315	30	3±0.5	105	TO-3P (Q)	5.1
FMR19N60E	600	19	76	0.365	150	30	3±0.5	105	TO-3PF	6.0
FMH23N60E	600	23	92	0.28	400	30	3±0.5	130	TO-3P (Q)	5.1
FMR23N60E	600	23	92	0.28	200	30	3±0.5	130	TO-3PF	6.0
FMV07N65E	650	7	28	1.47	37	30	3±0.5	35	TO-220F (SLS)	1.7
FMV09N65E	650	9	36	0.97	60	30	3±0.5	47	TO-220F (SLS)	1.7
FMV07N70E	700	7	28	1.5	48	30	4±0.5	32	TO-220F (SLS)	1.7
FMH07N70E	700	7	28	1.5	115	30	4±0.5	32	TO-3P (Q)	5.1
FMV09N70E	700	9	36	1.2	60	30	4±0.5	38	TO-220F (SLS)	1.7
FMH09N70E	700	9	36	1.2	145	30	4±0.5	38	TO-3P (Q)	5.1
FMV11N70E	700	11	44	0.85	85	30	4±0.5	50	TO-220F (SLS)	1.7
FMH11N70E	700	11	44	0.85	205	30	4±0.5	50	TO-3P (Q)	5.1
FMV15N70E	700	15	60	0.59	120	30	4±0.5	66	TO-220F (SLS)	1.7
FMV06N80E	800	6	24	2.0	48	30	4±0.5	32	TO-220F (SLS)	1.7
FMH06N80E	800	6	24	2.0	115	30	4±0.5	32	TO-3P (Q)	5.1
FMI06N80E	800	6	24	2.0	135	30	4±0.5	32	T-Pack(L)	1.6
FMC06N80E	800	6	24	2.0	135	30	4±0.5	32	T-Pack(S)	1.6
FMV08N80E	800	8	32	1.6	60	30	4±0.5	38	TO-220F(SLS)	1.7
FMH08N80E	800	8	32	1.6	145	30	4±0.5	38	TO-3P(Q)	5.1
FMI08N80E	800	8	32	1.6	165	30	4±0.5	38	T-Pack(L)	1.6
FMC08N80E	800	8	32	1.6	165	30	4±0.5	38	T-Pack(S)	1.6
FMV10N80E	800	10	40	1.1	85	30	4±0.5	50	TO-220F(SLS)	1.7
FMH10N80E	800	10	40	1.1	205	30	4±0.5	50	TO-3P(Q)	5.1
FMV13N80E	800	13	52	0.78	120	30	4±0.5	66	TO-220F (SLS)	1.7
FMH13N80E	800	13	52	0.78	285	30	4±0.5	66	TO-3P (Q)	5.1

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

SuperFAP-E³ series

900V class

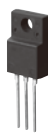
Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS(th)}	Q _G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
FMH06N90E	900	6	24	2.5	115	30	4±0.5	33	TO-3P (Q)	5.1
FMV06N90E	900	6	24	2.5	48	30	4±0.5	33	TO-220F (SLS)	1.7
FMI06N90E	900	6	24	2.5	135	30	4±0.5	33	T-Pack (L)	1.6
FMC06N90E	900	6	24	2.5	135	30	4±0.5	33	T-Pack (S)	1.6
FMH07N90E	900	7	28	2.0	145	30	4±0.5	39	TO-3P (Q)	5.1
FMV07N90E	900	7	28	2.0	60	30	4±0.5	39	TO-220F (SLS)	1.7
FMI07N90E	900	7	28	2.0	165	30	4±0.5	39	T-Pack (L)	1.6
FMC07N90E	900	7	28	2.0	165	30	4±0.5	39	T-Pack (S)	1.6
FMH09N90E	900	9	36	1.4	205	30	4±0.5	50	TO-3P (Q)	5.1
FMV09N90E	900	9	36	1.4	85	30	4±0.5	50	TO-220F (SLS)	1.7
FMR09N90E	900	9	36	1.4	100	30	4±0.5	50	TO-3PF	6.0
FMH11N90E	900	11	44	1.0	285	30	4±0.5	60	TO-3P (Q)	5.1
FMV11N90E	900	11	44	1.0	120	30	4±0.5	60	TO-220F (SLS)	1.7
FMR11N90E	900	11	44	1.0	135	30	4±0.5	60	TO-3PF	6.0

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

SuperFAP-E^{3S} Low Qg series

Low-on resistance, low switching noise and low switching loss

SuperFAP-E ^{3S} Low Qg series			TO-220	TO-220F (SLS)	TO-3P (Q)	TO-3PF	T-Pack(L)	T-Pack (S)	TFP
									
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)							
500	0.5	12	✓	✓			✓	✓	✓
	0.38	16	✓	✓	✓		✓	✓	✓
	0.31	20	✓	✓	✓		✓	✓	✓
	0.27	21		✓	✓	✓			
	0.245	23		✓	✓	✓			
	0.19	28			✓	✓			
600	1.2	6	✓	✓			✓	✓	
	0.75	12	✓	✓			✓	✓	✓
	0.58	13	✓	✓	✓		✓	✓	✓
	0.47	16	✓	✓	✓		✓	✓	✓
	0.4	17		✓	✓	✓			
	0.365	19		✓	✓	✓			
	0.28	23			✓	✓			

500V class

Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS} (th)	Q _G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
FMP12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	TO-220	2.0
FMV12N50ES	500	12	48	0.5	65	30	3.7±0.5	41	TO-220F (SLS)	1.7
FMI12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	T-Pack (L)	1.6
FMC12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	T-Pack (S)	1.6
FML12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	TFP	1.6
FMP16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	TO-220	2.0
FMV16N50ES	500	16	64	0.38	80	30	3.7±0.5	52	TO-220F (SLS)	1.7
FMI16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	T-Pack (L)	1.6
FMC16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	T-Pack (S)	1.6
FMH16N50ES	500	16	64	0.38	195	30	3.7±0.5	52	TO-3P (Q)	5.1
FML16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	TFP	1.6
FMP20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	TO-220	2.0
FMV20N50ES	500	20	80	0.31	95	30	4.2±0.5	57	TO-220F (SLS)	1.7
FMI20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	T-Pack (L)	1.6
FMC20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	T-Pack (S)	1.6
FMH20N50ES	500	20	80	0.31	235	30	4.2±0.5	57	TO-3P (Q)	5.1
FML20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	TFP	1.6
FMV21N50ES	500	21	84	0.27	120	30	4.2±0.5	67	TO-220F (SLS)	1.7
FMR21N50ES	500	21	84	0.27	135	30	4.2±0.5	67	TO-3PF	6.0
FMH21N50ES	500	21	84	0.27	285	30	4.2±0.5	67	TO-3P (Q)	5.1
FMV23N50ES	500	23	92	0.245	130	30	4.2±0.5	74	TO-220F (SLS)	1.7
FMR23N50ES	500	23	92	0.245	150	30	4.2±0.5	74	TO-3PF	6.0
FMH23N50ES	500	23	92	0.245	315	30	4.2±0.5	74	TO-3P (Q)	5.1
FMR28N50ES	500	28	112	0.19	200	30	4.2±0.5	92	TO-3PF	6.0
FMH28N50ES	500	28	112	0.19	400	30	4.2±0.5	92	TO-3P (Q)	5.1

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

SuperFAP-E3S Low Qg series

600V class

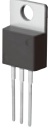
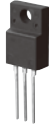
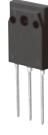
Device type	V_{DS}	I_D	$I_{D(pulse)}$	$R_{DS(on)}$ max. *1	P_{tot} *2	V_{GS}	$V_{GS(th)}$	Q_G typ. nC	Package	Net mass Grams
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			
FMP06N60ES	600	6	24	1.2	105	30	3.7±0.5	31	TO-220	2.0
FMV06N60ES	600	6	24	1.2	37	30	3.7±0.5	31	TO-220F (SLS)	1.7
FMI06N60ES	600	6	24	1.2	105	30	3.7±0.5	31	T-Pack (L)	1.6
FMC06N60ES	600	6	24	1.2	105	30	3.7±0.5	31	T-Pack (S)	1.6
FMP12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	TO-220	2.0
FMV12N60ES	600	12	48	0.75	65	30	4.2±0.5	37	TO-220F (SLS)	1.7
FMI12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	T-Pack (L)	1.6
FMC12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	T-Pack (S)	1.6
FML12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	TFP	1.6
FMP13N60ES	600	13	48	0.58	225	30	4.2±0.5	48	TO-220	2.0
FMV13N60ES	600	13	48	0.58	225	30	4.2±0.5	48	TO-220F (SLS)	1.7
FMI13N60ES	600	13	48	0.58	225	30	4.2±0.5	48	T-Pack (L)	1.6
FMC13N60ES	600	13	48	0.58	225	30	4.2±0.5	48	T-Pack (S)	1.6
FMH13N60ES	600	13	48	0.58	195	30	4.2±0.5	48	TO-3P (Q)	5.1
FML13N60ES	600	13	48	1.58	225	30	4.2±0.5	48	TFP	1.6
FMP16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	TO-220	2.0
FMV16N60ES	600	16	64	0.47	95	30	4.2±0.5	56	TO-220F (SLS)	1.7
FMI16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	T-Pack (L)	1.6
FMC16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	T-Pack (S)	1.6
FMH16N60ES	600	16	64	0.47	235	30	4.2±0.5	56	TO-3P (Q)	5.1
FML16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	TFP	1.6
FMV17N60ES	600	17	68	0.4	120	30	4.2±0.5	68	TO-220F (SLS)	1.7
FMR17N60ES	600	17	68	0.4	135	30	4.2±0.5	68	TO-3PF	6.0
FMH17N60ES	600	17	68	0.4	285	30	4.2±0.5	68	TO-3P (Q)	5.1
FMV19N60ES	600	19	76	0.365	130	30	4.2±0.5	74	TO-220F (SLS)	1.7
FMR19N60ES	600	19	76	0.365	150	30	4.2±0.5	74	TO-3PF	6.0
FMH19N60ES	600	19	76	0.365	315	30	4.2±0.5	74	TO-3P (Q)	5.1
FMR23N60ES	600	23	92	0.28	200	30	4.2±0.5	92	TO-3PF	6.0
FMH23N60ES	600	23	92	0.28	400	30	4.2±0.5	92	TO-3P (Q)	5.1

*1 $R_{DS(on)}$: $V_{GS}=10V$

*2 P_{tot} : $T_C=25^{\circ}C$

SuperFAP-G series

Low-on resistance and low gate charge

SuperFAP-G series			TO-220	TO-220F	TO-220F (SLS)	TO-3PF	TO-247 (Type: A)	T-Pack (L)	T-Pack (S)	TFP
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)								
100	0.062	29	✓	✓				✓	✓	
120	0.03	67	✓	✓				✓	✓	✓
150	0.105	23	✓	✓				✓	✓	
	0.07	33	✓	✓				✓	✓	✓
	0.041	57	✓	✓				✓	✓	✓
	0.016	100					✓			
200	0.17	18	✓	✓				✓	✓	✓
	0.066	45	✓	✓				✓	✓	✓
250	0.26	14	✓	✓				✓	✓	
	0.13	24			✓					
	0.1	37	✓	✓		✓		✓	✓	✓
	0.053	59				✓	✓			
300	0.28	15		✓						
	0.13	32	✓	✓				✓	✓	✓
450	2.5	3	✓	✓						
	1.6	4.3	✓	✓						
	0.65	10	✓	✓				✓	✓	
	0.38	17	✓	✓				✓	✓	✓
500	2.3	3.6	✓	✓				✓	✓	
	0.85	9	✓	✓				✓	✓	
	0.7	11	✓	✓				✓	✓	
	0.52	14	✓	✓				✓	✓	
	0.46	16	✓	✓				✓	✓	
	0.38	19	✓	✓				✓	✓	
	0.26	25				✓	✓			✓
	0.11	51					✓			
	3.3	3	✓	✓				✓	✓	
600	1.2	8	✓	✓				✓	✓	
	1	9	✓	✓				✓	✓	
	0.75	12	✓	✓				✓	✓	
	0.65	13	✓	✓		✓				
	0.57	16	✓	✓			✓	✓	✓	
	0.37	21				✓	✓			
	0.16	43					✓			
	0.6	17				✓				
700	8	2.2	✓	✓						
900	6.4	2.6	✓	✓				✓	✓	
	4.3	3.7	✓	✓						
	2.5	6.0						✓	✓	

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

SuperFAP-G series

100–250V class

Device type	V_{DS}	I_D	$I_{D(pulse)}$	$R_{DS(on)}$ max. *1	P_{tot} *2	V_{GS}	$V_{GS(th)}$	Q_G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
2SK3598-01	100	29	116	0.062	105	±30	3 to 5	22	TO-220	2.0
2SK3599-01MR	100	29	116	0.062	37	±30	3 to 5	22	TO-220F	1.7
2SK3600-01L, S	100	29	116	0.062	105	±30	3 to 5	22	T-Pack (L, S)	1.6
2SK3920-01	120	67	268	0.03	270	±30	3 to 5	52	TO-220	2.0
2SK3886-01MR	120	67	268	0.03	95	±30	3 to 5	52	TO-220F	1.7
2SK3921-01L, S	120	67	268	0.03	270	±30	3 to 5	52	T-Pack (L, S)	1.6
2SK3922-01	120	67	268	0.03	270	±30	3 to 5	52	TFP	0.8
2SK3602-01	150	23	92	0.105	105	±30	3 to 5	21	TO-220	2.0
2SK3603-01MR	150	23	92	0.105	37	±30	3 to 5	21	TO-220F	1.7
2SK3604-01L, S	150	23	92	0.105	105	±30	3 to 5	21	T-Pack (L, S)	1.6
2SK3648-01	150	33	132	0.07	150	±30	3 to 5	34	TO-220	2.0
2SK3649-01MR	150	33	132	0.07	53	±30	3 to 5	34	TO-220F	1.7
2SK3650-01L, S	150	33	132	0.07	150	±30	3 to 5	34	T-Pack (L, S)	1.6
2SK3474-01	150	33	132	0.07	150	±30	3 to 5	34	TFP	0.8
2SK3537-01MR	150	33	132	0.07	53	±20	1 to 2.5	46	TO-220F	1.7
2SK3590-01	150	57	228	0.041	270	±30	3 to 5	52	TO-220	2.0
2SK3591-01MR	150	57	228	0.041	95	±30	3 to 5	52	TO-220F	1.7
2SK3592-01L, S	150	57	228	0.041	270	±30	3 to 5	52	T-Pack (L, S)	1.6
2SK3593-01	150	57	228	0.041	270	±30	3 to 5	52	TFP	0.8
2SK3882-01	150	100	400	0.016	600	±30	3 to 5	140	TO-247 (Type: A)	4.9
2SK3606-01	200	18	72	0.17	105	±30	3 to 5	21	TO-220	2.0
2SK3607-01MR	200	18	72	0.17	37	±30	3 to 5	21	TO-220F	1.7
2SK3608-01L, S	200	18	72	0.17	105	±30	3 to 5	21	T-Pack (L, S)	1.6
2SK3609-01	200	18	72	0.17	105	±30	3 to 5	21	TFP	0.8
2SK3594-01	200	45	180	0.066	270	±30	3 to 5	51	TO-220	2.0
2SK3595-01MR	200	45	180	0.066	95	±30	3 to 5	51	TO-220F	1.7
2SK3596-01L, S	200	45	180	0.066	270	±30	3 to 5	51	T-Pack (L, S)	1.6
2SK3597-01	200	45	180	0.066	270	±30	3 to 5	51	TFP	0.8
2SK3610-01	250	14	56	0.26	105	±30	3 to 5	21	TO-220	2.0
2SK3611-01MR	250	14	56	0.26	37	±30	3 to 5	21	TO-220F	1.7
2SK3612-01L, S	250	14	56	0.26	105	±30	3 to 5	21	T-Pack (L, S)	1.6
FMV24N25G	250	24	96	0.13	65	±30	3 to 5	36	TO-220F (SLS)	1.7
2SK3554-01	250	37	148	0.1	270	±30	3 to 5	44	TO-220	2.0
2SK3555-01MR	250	37	148	0.1	95	±30	3 to 5	44	TO-220F	1.7
2SK3556-01L, S	250	37	148	0.1	270	±30	3 to 5	44	T-Pack (L, S)	1.6
2SK3535-01	250	37	148	0.1	270	±30	3 to 5	44	TFP	0.8
2SK3651-01R	250	37	148	0.1	115	±30	3 to 5	44	TO-3PF	6.0
2SK3778-01	250	59	236	0.053	410	±30	3 to 5	80	TO-247 (Type: A)	4.9
2SK3779-01R	250	59	236	0.053	210	±30	3 to 5	80	TO-3PF	6.0

*1 $R_{DS(on)}$: $V_{GS}=10V$

*2 P_{tot} : $T_C=25^{\circ}C$

SuperFAP-G series

300–500V class

Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS(th)}	Q _G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
2SK3580-01MR	300	15	60	0.28	48	±30	3.5 to 4.5	23	TO-220F	1.7
2SK3772-01	300	32	128	0.13	270	±30	3 to 5	44.5	TO-220	2.0
2SK3773-01MR	300	32	128	0.13	95	±30	3 to 5	44.5	TO-220F	1.7
2SK3774-01L, S	300	32	128	0.13	270	±30	3 to 5	44.5	T-Pack (L, S)	1.6
2SK3775-01	300	32	128	0.13	270	±30	3 to 5	44.5	TFP	0.8
2SK3725-01	450	3	12	2.5	50	±30	3 to 5	10.5	TO-220	2.0
2SK3726-01MR	450	3	12	2.5	17	±30	3 to 5	10.5	TO-220F	1.7
2SK3916-01	450	4.3	17.2	1.6	21	±30	3 to 5	13	TO-220	2.0
2SK3917-01MR	450	4.3	17.2	1.6	21	±30	3 to 5	13	TO-220F	1.7
2SK3514-01	450	10	40	0.65	135	±30	3 to 5	22	TO-220	2.0
2SK3515-01MR	450	10	40	0.65	48	±30	3 to 5	22	TO-220F	1.7
2SK3516-01L, S	450	10	40	0.65	135	±30	3 to 5	22	T-Pack (L, S)	1.6
2SK3692-01	450	17	68	0.38	225	±30	3 to 5	33	TO-220	2.0
2SK3693-01MR	450	17	68	0.38	80	±30	3 to 5	33	TO-220F	1.7
2SK3694-01L, S	450	17	68	0.38	225	±30	3 to 5	33	T-Pack (L, S)	1.6
2SK4040-01	450	17	68	0.38	225	±30	3 to 5	33	TFP	0.8
2SK3985-01	500	3.6	14.4	2.3	60	±30	3 to 5	13	TO-220	2.0
2SK3986-01MR	500	3.6	14.4	2.3	21	±30	3 to 5	13	TO-220F	1.7
2SK3987-01L, S	500	3.6	14.4	2.3	60	±30	3 to 5	13	T-Pack (L, S)	1.6
2SK3519-01	500	9	36	0.85	135	±30	3 to 5	20	TO-220	2.0
2SK3520-01MR	500	9	36	0.85	48	±30	3 to 5	20	TO-220F	1.7
2SK4004-01MR	500	9	36	0.85	48	±30	2.5 to 3.5	24	TO-220F	1.7
2SK3521-01L, S	500	9	36	0.85	135	±30	3 to 5	20	T-Pack (L, S)	1.6
2SK3931-01	500	11	44	0.70	165	±30	3 to 5	25	TO-220	2.0
2SK3932-01MR	500	11	44	0.70	60	±30	3 to 5	25	TO-220F	1.7
2SK3933-01L, S	500	11	44	0.70	165	±30	3 to 5	25	T-Pack (L, S)	1.6
2SK3468-01	500	14	56	0.52	195	±30	3 to 5	30	TO-220	2.0
2SK3469-01MR	500	14	56	0.52	70	±30	3 to 5	30	TO-220F	1.7
2SK3512-01L, S	500	14	56	0.52	195	±30	3 to 5	30	T-Pack (L, S)	1.6
2SK3504-01	500	16	64	0.46	225	±30	3 to 5	33	TO-220	2.0
2SK3505-01MR	500	16	64	0.46	80	±30	3 to 5	33	TO-220F	1.7
2SK3581-01L, S	500	16	64	0.46	225	±30	3 to 5	33	T-Pack (L, S)	1.6
2SK3682-01	500	19	76	0.38	270	±30	3 to 5	32	TO-220	2.0
2SK3683-01MR	500	19	76	0.38	95	±30	3 to 5	32	TO-220F	1.7
2SK3684-01L, S	500	19	76	0.38	270	±30	3 to 5	32	T-Pack (L, S)	1.6
2SK3685-01	500	19	76	0.38	235	±30	3 to 5	32	TO-247 (Type: A)	4.9
FML19N50G	500	19	76	0.38	270	±30	3 to 5	32	TFP	0.8
2SK3522-01	500	25	100	0.26	335	±30	3 to 5	54	TO-247 (Type: A)	4.9
2SK3523-01R	500	25	100	0.26	160	±30	3 to 5	54	TO-3PF	6.0
2SK3680-01	500	51	208	0.11	600	±30	3 to 5	118	TO-247 (Type: A)	4.9

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

SuperFAP-G series

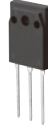
600–900V class

Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS(th)}	Q _G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
2SK3988-01	600	3	12	3.3	60	±30	3 to 5	13	TO-220	2.0
2SK3989-01MR	600	3	12	3.3	21	±30	3 to 5	13	TO-220F	1.7
2SK3990-01L, S	600	3	12	3.3	60	±30	3 to 5	13	T-Pack (L, S)	1.6
2SK3524-01	600	8	32	1.2	135	±30	3 to 5	20	TO-220	2.0
2SK3525-01MR	600	8	32	1.2	48	±30	3 to 5	20	TO-220F	1.7
2SK3526-01L, S	600	8	32	1.2	135	±30	3 to 5	20	T-Pack (L, S)	1.6
2SK3887-01	600	9	36	1.0	165	±30	3 to 5	25	TO-220	2.0
2SK3888-01MR	600	9	36	1.0	60	±30	3 to 5	25	TO-220F	1.7
2SK3889-01L, S	600	9	36	1.0	165	±30	3 to 5	25	T-Pack (L, S)	1.6
2SK3501-01	600	12	48	0.75	195	±30	3 to 5	30	TO-220	2.0
2SK3502-01MR	600	12	48	0.75	70	±30	3 to 5	30	TO-220F	1.7
2SK3513-01L, S	600	12	48	0.75	195	±30	3 to 5	30	T-Pack (L, S)	1.6
2SK3450-01	600	13	52	0.65	225	±30	3 to 5	34	TO-220	2.0
2SK3451-01MR	600	13	52	0.65	80	±30	3 to 5	34	TO-220F	1.7
2SK3753-01R	600	13	52	0.65	95	±30	3 to 5	34	TO-3PF	6.0
2SK3686-01	600	16	64	0.57	270	±30	3 to 5	33	TO-220	2.0
2SK3687-01MR	600	16	64	0.57	97	±30	3 to 5	33	TO-220F	1.7
2SK3688-01L, S	600	16	64	0.57	270	±30	3 to 5	33	T-Pack (L, S)	1.6
2SK3689-01	600	16	64	0.57	235	±30	3 to 5	33	TO-247 (Type: A)	4.9
2SK3527-01	600	21	84	0.37	335	±30	3 to 5	54	TO-247 (Type: A)	4.9
2SK3528-01R	600	21	84	0.37	160	±30	3 to 5	54	TO-3PF	6.0
2SK3681-01	600	43	172	0.16	600	±30	3 to 5	118	TO-247 (Type: A)	4.9
2SK3891-01R	700	17	68	0.6	170	±30	3 to 5	46	TO-3PF	6.0
2SK3727-01	900	2.2	8.8	8.0	75	±30	3.5 to 4.5	8.3	TO-220	2.0
2SK3728-01MR	900	2.2	8.8	8.0	26	±30	3.5 to 4.5	8	TO-220F	1.7
2SK3981-01	900	2.6	10.4	6.4	90	±30	3 to 5	13	TO-220	2.0
2SK3982-01MR	900	2.6	10.4	6.4	32	±30	3 to 5	13	TO-220F	1.7
2SK3983-01L, S	900	2.6	10.4	6.4	90	±30	3 to 5	13	T-Pack (L, S)	1.6
2SK3698-01	900	3.7	14.8	4.3	120	±30	3.5 to 4.5	13	TO-220	2.0
2SK3699-01MR	900	3.7	14.8	4.3	43	±30	3.5 to 4.5	13	TO-220F	1.7
2SK3676-01L, S	900	6	24	2.5	195	±30	3 to 5	21.5	T-Pack (L, S)	1.6

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

SuperFAP-G series (Built-in FRED type)

SuperFAP-G Built-in FRED series			TO-220	TO-220F	TO-247 (Type: A)	T-Pack (L)	T-Pack (S)
							
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)					
500	0.55	13	✓	✓			
600	0.8	11	✓	✓		✓	✓
	0.17	42			✓		

500–600V class

Device type	V_{DS}	I_D	I_D (pulse)	$R_{DS(on)}$ max. ^{*1}	P_{tot} ^{*2}	V_{GS}	$V_{GS(th)}$	Q_G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
2SK3695-01	500	13	52	0.55	195	±30	3 to 5	28	TO-220	2.0
2SK3696-01MR	500	13	52	0.55	70	±30	3 to 5	28	TO-220F	1.7
2SK3928-01	600	11	44	0.8	195	±30	3 to 5	30	TO-220	2.0
2SK3929-01MR	600	11	44	0.8	70	±30	3 to 5	30	TO-220F	1.7
2SK3930-01L, S	600	11	44	0.8	195	±30	3 to 5	30	T-Pack (L, S)	1.6
2SK3697-01	600	42	168	0.17	600	±30	3 to 5	105	TO-247 (Type: A)	4.9

^{*1} $R_{DS(on)}$: $V_{GS}=10V$

^{*2} P_{tot} : $T_C=25^{\circ}C$

Trench Power MOSFET

Low-on resistance and high gate capability

Trench Power MOSFET			TO-220	TO-220F	TO-3P	TO-247(Type: A)	T-Pack(L)	T-Pack(S)
								
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)						
40	0.006	70				✓		
60	0.0065	70		✓				
		80	✓				✓	✓
	0.0065	100			✓			
75	0.0079	70		✓				
	0.0085	70						✓
100	0.0067	80						✓
	0.0067	100				✓		✓
	0.0128	80	✓	✓			✓	✓
150	0.0245	65	✓	✓			✓	✓
200	0.0470	49	✓	✓			✓	✓

40–75V class

Device type	V_{DS}	I_D	I_D (pulse)	$R_{DS(on)}$ max. *1	P_{tot} *2	V_{GS}	$V_{GS(th)}$ typ. Volts	Package	Net mass Grams
	Volts	Amps.	Amps.	Ohms	Watts	Volts			
2SK4068-01	40	70	280	0.006	115	+30/-20	3.0±0.5	TO-247 (Type: A)	4.9
2SK3273-01MR	60	70	280	0.0065	70	+30/-20	3.0±0.5	TO-220F	1.7
2SK3270-01	60	80	320	0.0065	135	+30/-20	3.0±0.5	TO-220	2.0
2SK3272-01L, S	60	80	320	0.0065	135	+30/-20	3.0±0.5	T-Pack (L, S)	1.6
2SK4047-01S	60	80	320	0.0065	195	+30/-20	3.0±0.5	T-Pack (S)	1.6
2SK3271-01	60	100	400	0.0065	155	+30/-20	3.0±0.5	TO-3P	5.5
2SK3730-01MR	75	70	280	0.0079	70	±20	3.0±0.5	TO-220F	1.7
2SK3804-01S	75	70	280	0.0085	162	±20	3.0±0.5	T-Pack (S)	1.6

*1 $R_{DS(on)}$: $V_{GS}=10V$

*2 P_{tot} : $T_C=25^\circ C$

100–200V class

Device type	V_{DS}	I_D	I_D (pulse)	$R_{DS(on)}$ max. *1	P_{tot} *2	V_{GS}	$V_{GS(th)}$ typ. Volts	Package	Net mass Grams
	Volts	Amps.	Amps.	Ohms	Watts	Volts			
FMC80N10R6	100	80	320	0.0067	180	+30/-20	2 to 4	T-Pack (S)	1.6
FMY100N10R6	100	100	400	0.0067	280	+30/-20	2 to 4	TO-247 (Type: A)	6.3
FMP80N10T2	100	80	320	0.0128	270	+30/-20	2 to 4	TO-220	2.0
FMA80N10T2	100	80	320	0.0128	95	+30/-20	2 to 4	TO-220F	1.7
FMI80N10T2	100	80	320	0.0128	270	+30/-20	2 to 4	T-Pack (L)	1.6
FMC80N10T2	100	80	320	0.0128	270	+30/-20	2 to 4	T-Pack (S)	1.6
FMP65N15T2	150	65	260	0.0245	270	+30/-20	2 to 4	TO-220	2.0
FMA65N15T2	150	65	260	0.0245	95	+30/-20	2 to 4	TO-220F	1.7
FMI65N15T2	150	65	260	0.0245	270	+30/-20	2 to 4	T-Pack (L)	1.6
FMC65N15T2	150	65	260	0.0245	270	+30/-20	2 to 4	T-Pack (S)	1.6
FMP49N20T2	200	49	196	0.047	270	+30/-20	2 to 4	TO-220	2.0
FMA49N20T2	200	49	196	0.047	95	+30/-20	2 to 4	TO-220F	1.7
FMI49N20T2	200	49	196	0.047	270	+30/-20	2 to 4	T-Pack (L)	1.6
FMC49N20T2	200	49	196	0.047	270	+30/-20	2 to 4	T-Pack (S)	1.6

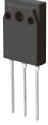
*1 $R_{DS(on)}$: $V_{GS}=10V$

*2 P_{tot} : $T_C=25^\circ C$

Automotive Super J MOS[®] S2 series



Low-on resistance, low switching noise and low switching loss

Automotive Super J MOS [®] S2 series			TO-247 (Type: A)	T-Pack (S)
				
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)		
600	0.190	15.5		✓
	0.160	17.9	✓	✓
	0.125	22.8	✓	✓
	0.099	29.3	✓	✓
	0.088	32.8	✓	✓
	0.079	37.1	✓	✓
	0.070	39.4	✓	
	0.040	66.2	✓	
	0.025	95.5	✓	

600V class

Device type	V_{DSS}	I_D	I_D (pulse)	$R_{DS(on)}$ max. ^{*1}	P_{tot} ^{*2}	V_{GS}	$V_{GS(th)}$ typ.	Q_G typ.	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts	nC		Grams
FMC60N190S2A	600	15.5	46.5	0.190	113	±30	3.0±0.5	46	T-Pack (S)	1.6
FMY60N160S2A	600	17.9	53.7	0.160	110	±30	4.0±0.5	43	TO-247 (Type: A)	6.4
FMC60N160S2A	600	17.9	53.7	0.160	127	±30	4.0±0.5	43	T-Pack (S)	1.6
FMY60N125S2A	600	22.8	68.2	0.125	140	±30	4.0±0.5	53	TO-247 (Type: A)	6.4
FMC60N125S2A	600	22.8	68.2	0.125	160	±30	4.0±0.5	53	T-Pack (S)	1.6
FMY60N099S2A	600	29.3	87.7	0.099	185	±30	4.0±0.5	65	TO-247 (Type: A)	6.4
FMC60N099S2A	600	29.3	87.7	0.099	210	±30	4.0±0.5	65	T-Pack (S)	1.6
FMY60N088S2A	600	32.8	98.4	0.088	205	±30	4.0±0.5	72	TO-247 (Type: A)	6.4
FMC60N088S2A	600	32.8	98.4	0.088	235	±30	4.0±0.5	72	T-Pack (S)	1.6
FMY60N079S2A	600	37.1	111.3	0.079	235	±30	4.0±0.5	80	TO-247 (Type: A)	6.4
FMC60N079S2A	600	37.1	111.3	0.079	270	±30	4.0±0.5	80	T-Pack (S)	1.6
FMY60N070S2A	600	39.4	118.2	0.070	270	±30	4.0±0.5	90	TO-247 (Type: A)	6.4
FMY60N040S2A	600	66.2	198.6	0.040	435	±30	4.0±0.5	147	TO-247 (Type: A)	6.4
FMY60N025S2A	600	95.5	286.5	0.025	575	±30	4.0±0.5	222	TO-247 (Type: A)	6.4

^{*1} $R_{DS(on)}$: $V_{GS}=10V$

^{*2} P_{tot} : $T_C=25^{\circ}C$

Super J MOS[®] is registered trademarks of Fuji Electric.

Automotive Super J MOS® S2FD series (Built-in FRED type)



Automotive Super J MOS® S2FD series (Built-in FRED type)			TO-247 (Type: A)	T-Pack (S)
				
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)		
400	0.060	42		✓
500	0.071	38.9	✓	✓
600	0.133	22.8	✓	✓
	0.105	29.3	✓	✓
	0.081	37.1	✓	✓

400V, 500V class

Device type	V_{DSS}	I_D	I_D (pulse)	$R_{DS(on)}$ max. *1	P_{tot} *2	V_{GS}	$V_{GS(th)}$ typ.	Q_G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
FMC40N060S2FDA	400	42	126	0.060	270	±30	4.0±1	120	T-Pack (S)	1.6
FMY50N071S2FDA	500	38.9	116.7	0.071	235	±30	4.0±1	98	TO-247 (Type: A)	6.4
FMC50N071S2FDA	500	38.9	116.7	0.071	270	±30	4.0±1	98	T-Pack (S)	1.6

600V class

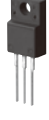
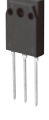
Device type	V_{DSS}	I_D	I_D (pulse)	$R_{DS(on)}$ max. *1	P_{tot} *2	V_{GS}	$V_{GS(th)}$ typ.	Q_G typ. nC	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts			Grams
FMY60N133S2FDA	600	22.8	68.2	0.133	140	±30	4.0±1	59	TO-247 (Type: A)	6.4
FMC60N133S2FDA	600	22.8	68.2	0.133	160	±30	4.0±1	59	T-Pack (S)	1.6
FMY60N105S2FDA	600	29.3	87.7	0.105	185	±30	4.0±1	75	TO-247 (Type: A)	6.4
FMC60N105S2FDA	600	29.3	87.7	0.105	210	±30	4.0±1	75	T-Pack (S)	1.6
FMY60N081S2FDA	600	37.1	111.3	0.081	235	±30	4.0±1	93	TO-247 (Type: A)	6.4
FMC60N081S2FDA	600	37.1	111.3	0.081	270	±30	4.0±1	93	T-Pack (S)	1.6

*1 $R_{DS(on)}$: $V_{GS}=10V$

*2 P_{tot} : $T_C=25^\circ C$

Super J MOS® is registered trademarks of Fuji Electric.

Automotive MOSFET (Trench Power MOS, SuperFAP-E^{3S})

Automotive Trench Power MOSFET SuperFAP-E ^{3S} Low Qg series			TO-220	TO-220F	TO-3P	TO-247 (Type: A)	T-Pack (L)	T-Pack (S)
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)						
40	0.006	70				✓		
60	0.0065	70		✓				
		80	✓				✓	✓
		100			✓	✓		
75	0.0079	70		✓				
	0.0085	70						✓
100	0.0067	80						✓
		100				✓		
300	0.072	50				✓		
	0.045	72				✓		
600	0.28	24				✓		
	0.20	31				✓		
	0.16	36				✓		

Automotive SuperFAP-E^{3S} Low Qg series

■ 300–600V class



Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS} (th) typ.	Q _G typ.	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts	nC		Grams
FMY50N30ES	300	50	200	0.072	400	±30	4.2±0.5	97	TO-247 (Type: A)	6.4
FMY72N30ES	300	72	288	0.045	570	±30	4.2±0.5	155	TO-247 (Type: A)	6.4
FMY24N60ES	600	24	96	0.280	400	±30	4.2±0.5	95	TO-247 (Type: A)	6.4
FMY31N60ES	600	31	124	0.200	495	±30	4.2±0.5	125	TO-247 (Type: A)	6.4
FMY36N60ES	600	36	144	0.160	570	±30	4.2±0.5	155	TO-247 (Type: A)	6.4

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

Automotive Trench Power MOSFET

■ 40–100V class

Device type	V _{DSS}	I _D	I _D (pulse)	R _{DS(on)} max. *1	P _{tot} *2	V _{GS}	V _{GS} (th) typ.	Package	Net mass
	Volts	Amps.	Amps.	Ohms	Watts	Volts	Volts		Grams
2SK4068-01	40	70	280	0.006	115	+30/-20	3.0±0.5	TO-247 (Type: A)	4.9
2SK3273-01MR	60	70	280	0.0065	70	+30/-20	3.0±0.5	TO-220F	1.7
2SK3270-01	60	80	320	0.0065	135	+30/-20	3.0±0.5	TO-220	2.0
2SK3272-01L, S	60	80	320	0.0065	135	+30/-20	3.0±0.5	T-Pack (L, S)	1.6
2SK4047-01S	60	80	320	0.0065	195	+30/-20	3.0±0.5	T-Pack (S)	1.6
FMY100N06T *1	60	100	400	0.0065	135	+30/-20	3.0±0.5	TO-247 (Type: A)	6.3
2SK3271-01	60	100	400	0.0065	155	+30/-20	3.0±0.5	TO-3P	5.5
2SK3730-01MR	75	70	280	0.0079	70	±20	3.0±0.5	TO-220F	1.7
2SK3804-01S	75	70	280	0.0085	135	±20	3.0±0.5	T-Pack (S)	1.6
FMC80N10R6	100	80	320	0.0067	324	+30/-20	2 to 4	T-Pack (S)	1.6
FMY100N10R6 *1	100	100	400	0.0067	280	+30/-20	2 to 4	TO-247 (Type: A)	6.3

*1 R_{DS(on)} : V_{GS}=10V

*2 P_{tot}: T_C=25°C

Automotive SuperFAP-E^{3S} Low Qg series(Built-in FRED type)



Automotive SuperFAP-E ^{3S} Low Qg series (Built-in FRED type)			TO-247 (Type: A)
			
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)	
300	0.085	47	✓
	0.053	67	✓
600	0.29	22	✓
	0.21	30	✓
	0.17	35	✓

Low-on resistance, low switching noise and low switching loss

300–600V class

Device type	V_{DSS} Volts	I_D Amps.	I_D (pulse) Amps.	$R_{DS(on)}$ max. *1 Ohms	P_{tot} *2 Watts	V_{GS} Volts	$V_{GS(th)}$ typ. Volts	Q_G typ. nC	t_{rr} typ. nsec	Package	Net mass Grams
FMY47N30ESF	300	47	188	0.085	400	±30	4.2±1.0	96	130	TO-247 (Type: A)	6.4
FMY67N30ESF	300	67	268	0.053	570	±30	4.2±1.0	155	150	TO-247 (Type: A)	6.4
FMY22N60ESF	600	22	88	0.290	400	±30	4.2±1.0	95	150	TO-247 (Type: A)	6.4
FMY30N60ESF	600	30	120	0.210	495	±30	4.2±1.0	125	160	TO-247 (Type: A)	6.4
FMY35N60ESF	600	35	140	0.170	570	±30	4.2±1.0	155	160	TO-247 (Type: A)	6.4

*1 $R_{DS(on)}$: $V_{GS}=10V$

*2 P_{tot} : $T_C=25^{\circ}C$

Automotive SuperFAP-E^{3S} Low Qg Built-in FRED series of products satisfies the quality assurance level of general automobile use (conforms to AEC-Q101). Do not use the products for equipment requiring strict reliability such as aerospace equipment.

Automotive IPS series (Intelligent Power Switches)

Self protection

Device type	Type	Channels	V_{CC} DC (pulse) Volts	I_D Amps.	$R_{DS(on)}$ typ. Ohms	$R_{DS(on)}$ max. Ohms	P_{tot} Watts	Package	Net mass Grams	Remarks
F5106H	High side	1	35 (50)	2	0.1 *1	0.12 *1	1.5	SOP-8	0.2	Built-in Amp
F5112H	High side	1	35 (50)	2	0.1 *1	0.12 *1	2	SOP-8	0.2	
F5114H	High side	2	35 (50)	1.6	0.1 *1	0.12 *1	1.5	SSOP-12	0.2	
F5074H	High side	1	35 (50)	80	0.004 *1	0.005 *1	114	PSOP-12	0.4	
F5018	Low side	1	40	8	0.088 *2	0.14 *2	15	K-Pack	0.6	
F5019	Low side	1	40	12	0.088 *2	0.14 *2	30	T-Pack	1.6	
F5020	Low side	1	40	3	0.25 *2	0.40 *2	10	K-Pack	0.6	
F5033	Low side	2	40	1	0.41 *2	0.60 *2	1.5	SOP-8	0.2	
F5041	Low side	2	40	1	0.47 *2	0.60 *2	1.5	SOP-8	0.2	
F5042	Low side	1	40	8	0.088 *2	0.14 *2	15	K-Pack	0.6	High frequency switching version for F5018
F5043	Low side	1	40	12	0.088 *2	0.14 *2	30	T-Pack	1.6	High frequency switching version for F5019
F5055	Low side	2	40	5.9	0.088 *2	0.14 *2	7.8	SSOP-20	0.3	
F5063L	Low side	2	40	1.9	0.095 *2	0.14 *2	1.75	SOP-8	0.2	

*1 $R_{DS(on)}$: $V_{CC}=13V$

*2 $R_{DS(on)}$: $V_{IN}/V_{GS}=5V$

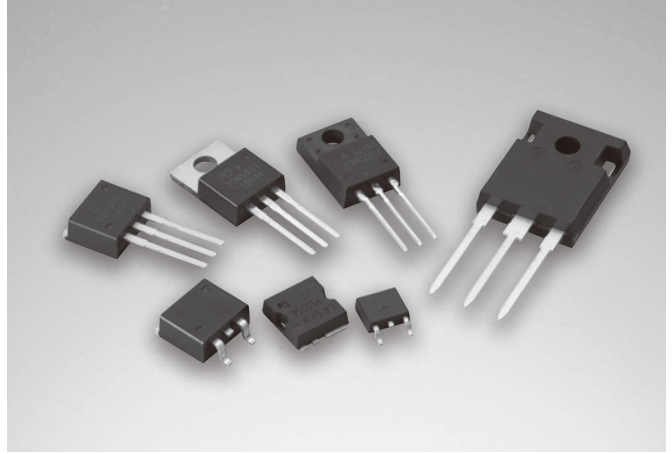
Rectifier Diodes

Features of SBD, LLD	116
Schottky Barrier Diodes (SBD).....	118
Ultra Low IR Schottky Barrier Diodes.....	120
Low IR Schottky Barrier Diodes	121
Super LLD2 (For Critical conduction mode PFC)	124
Super LLD3 (For Continuous conduction mode PFC).....	125
Low-Loss Fast Recovery Diodes (LLD).....	126
Low-Loss Fast Soft Recovery Diodes (LLD)	128
Ultra Fast Recovery Diodes	129
Soft Recovery Fast Recovery Diode	130

Rectifier Diodes



Fuji Electric's rectifier diodes have features such as low V_F characteristics and low I_R characteristics, and are compatible with PFC circuits of power supplies and secondary-side rectification circuits.



Features of SBD (Schottky Barrier Diode)

Ultra Low-IR SBD

- Guaranteed $T_{vj}=175^{\circ}\text{C}$
- V_F is same level and I_R is reduced by less than 1/10.

Features of LLD (Low Loss Diode)

Super LLD3 (For Continuous conduction mode PFC)

- Realize acceleration and low V_F compared with existing model

Super LLD2 (For Critical conduction mode PFC)

- Achieved low power loss by low V_F
- Achieved low noise by soft recovery

Part numbers

FDRW50C60L (example)

F	DR		W		50	C		60		L	
Company code	Device code		Package code		Current	Polarity		Voltage		Series	
Fuji	DR	FWD	P	TO-220	×1	S,T	Single	60	600V	L	Ultra Fast Recovery
			W	TO-247 (Type: B)		C	Cathode Common	65	650V	J	Sort/Fast Recovery
				TO-247-2 (Type: B)				120	1200V		
				TO-247-2 (Type: A)							

YA875C10R (example)

YA		87		5		C		10						R	
Package code		Series		Current		Polarity		Voltage						Additional code	
KP	K-Pack (L)	8x	SBD	1	5A	S	Single	SBD	02	20V	LLD	2	200V	R or RR	
KS	K-Pack (S)	9x	LLD	2	10A	C	Cathode Common		03	30V		3	300V		
MS	TFP			3	15A				04	40V		4	400V		
PA	TO-3P			4	15A				06	60V		6	600V		
PG	TO-3PF			5	20A				08	80V		8	800V		
PH	TO-247 (Type: A)			6	30A				09	90V		10	1000V		
TP	T-Pack (L)			8	30A				10	100V		12	1200V		
TS	T-Pack (S)			9	40A				12	120V		15	1500V		
YA	TO-220			0	40A				15	150V					
YG	TO-220F								20	200V					

ESAD92M-02R (example)

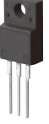
ESA		D		92		M		02						R	
Chip		Current		Series		Package code		Voltage						Additional code	
ESA	Dual chips	Lead	ERA	≤ 1A	8x	SBD	non	Non Isolation	SBD	004	40V	LLD	02	200V	R or RR
ER	Single chip		ERB	≤ 2A	9x	LLD	M	Full mold		006	60V		03	300V	
			ERC	≤ 3A						009	90V				
			ERD	-											
		TOPKG	ERC	≤ 5A											
			ESAB	5A-10A											
			ESAC	10A-20A											
			ESAD	20A-30A											

Letter symbols

V_{RRM} Repetitive peak reverse voltage
 V_{RSM} Non-repetitive peak reverse voltage
 I_O Average output current
 I_{FSM} Surge current
 T_j Junction temperature
 T_a Ambient temperature
 T_c Case temperature

T_{stg} Storage temperature
 V_{FM} Forward voltage
 I_{RRM} Reverse current
 t_{rr} Reverse recovery time
 $R_{th(j-c)}$ Thermal resistance (Junction to case)
 T_l Lead temperature
 $I_{F(AV)}$ Average forward current

Schottky Barrier Diodes (SBD)

Schottky Barrier Diodes(SBD)					TO-220F	K-Pack (L)	K-Pack (S)	TFP
								
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (mA)				
Single	40	5	0.55	5	✓		✓	
	45	10	0.6	2	✓			
	60	5	0.59	5	✓			
	15	0.63	20		✓			
Dual	20	7	0.39	10		✓	✓	
	30	5	0.47	5			✓	
	40	5	0.55	5	✓		✓	
		10	0.55	5	✓			
		20	0.6	15	✓			
		30	0.53	8	✓			✓
	60	5	0.58	5	✓			
		10	0.58	5	✓			
		15	0.58	5	✓			
		20	0.58	15	✓			
		30	0.58	3				✓
	90	5	0.9	5			✓	
	100	5	0.8	0.7	✓			
		10	0.8	1.2	✓			
		20	0.8	2.5	✓			
		30	0.8	20	✓			

1 in one-package (Single)

Device type	Maximum rating		I_{FSM}^{*2} Amps.	Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)			Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.			V_{FM} max. Volts	I_{RRM}^{*3} max.mA	$R_{th(j-c)}$ °C/W		
KS826S04	40	5.0 ($T_C=110^\circ\text{C}$)	80	-40 to +150	0.55 ($I_F=5.0\text{A}$)	5	10	K-Pack (S)	0.6
YG811S04R	40	5.0 ($T_C=122^\circ\text{C}$)	120	-40 to +150	0.55 ($I_F=5.0\text{A}$)	5	5.0	TO-220F	1.7
YG812S04R	45	10 ($T_C=124^\circ\text{C}$)	120	-40 to +150	0.6 ($I_F=10\text{A}$)	2	2.5	TO-220F	1.7
YG811S06R	60	5.0 ($T_C=127^\circ\text{C}$)	80	-40 to +150	0.59 ($I_F=5.0\text{A}$)	5	5.0	TO-220F	1.7
YG804S06R	60	15 ($T_C=99^\circ\text{C}$)	120	-40 to +150	0.63 ($I_F=15\text{A}$)	20	2.2	TO-220F	1.7

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms

*3 $V_R=V_{RRM}$

Schottky Barrier Diodes (SBD)

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)			Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max. mA	$R_{th(j-c)}$ °C/W		
KP883C02	20	7 ($T_C=89^{\circ}\text{C}$)	60	-40 to +125	0.39 ($I_F=2.5\text{A}$)	10	10.0	K-Pack (L)	0.6
KS883C02	20	7 ($T_C=89^{\circ}\text{C}$)	60	-40 to +125	0.39 ($I_F=2.5\text{A}$)	10	10.0	K-Pack (S)	0.6
KS823C03	30	5 ($T_C=117^{\circ}\text{C}$)	60	-40 to +150	0.47 ($I_F=2.5\text{A}$)	5	10.0	K-Pack (S)	0.6
KS823C04	40	5 ($T_C=107^{\circ}\text{C}$)	60	-40 to +150	0.55 ($I_F=2.5\text{A}$)	5	10.0	K-Pack (S)	0.6
YG801C04R	40	5 ($T_C=125^{\circ}\text{C}$)	100	-40 to +150	0.55 ($I_F=2.0\text{A}$)	5	5.0	TO-220F	1.7
YG802C04R	40	10 ($T_C=110^{\circ}\text{C}$)	120	-40 to +150	0.55 ($I_F=4.0\text{A}$)	5	3.5	TO-220F	1.7
YG805C04R	40	20 ($T_C=100^{\circ}\text{C}$)	120	-40 to +150	0.6 ($I_F=10\text{A}$)	15	2.5	TO-220F	1.7
YG838C04R	40	30 ($T_C=85^{\circ}\text{C}$)	180	-40 to +150	0.53 ($I_F=12.5\text{A}$)	8	2.0	TO-220F	1.7
MS838C04	40	30 ($T_C=111^{\circ}\text{C}$)	180	-40 to +150	0.53 ($I_F=12.5\text{A}$)	8	1.2	TFP	0.8
YG801C06R	60	5 ($T_C=125^{\circ}\text{C}$)	60	-40 to +150	0.58 ($I_F=2.0\text{A}$)	5	5.0	TO-220F	1.7
YG802C06R	60	10 ($T_C=118^{\circ}\text{C}$)	80	-40 to +150	0.58 ($I_F=4.0\text{A}$)	5	3.5	TO-220F	1.7
YG803C06R	60	15 ($T_C=94^{\circ}\text{C}$)	100	-40 to +150	0.58 ($I_F=6.0\text{A}$)	5	3.0	TO-220F	1.7
YG805C06R	60	20 ($T_C=108^{\circ}\text{C}$)	80	-40 to +150	0.58 ($I_F=8.0\text{A}$)	15	2.5	TO-220F	1.7
MS808C06	60	30 ($T_C=118^{\circ}\text{C}$)	150	-40 to +150	0.58 ($I_F=12.5\text{A}$)	3	1.2	TFP	0.8
KS823C09	90	5 ($T_C=100^{\circ}\text{C}$)	60	-40 to +150	0.9 ($I_F=2.5\text{A}$)	5	10.0	K-Pack (S)	0.6
YG801C10R	100	5 ($T_C=117^{\circ}\text{C}$)	60	-40 to +150	0.8 ($I_F=1.5\text{A}$)	0.7	5.0	TO-220F	1.7
YG802C10R	100	10 ($T_C=102^{\circ}\text{C}$)	80	-40 to +150	0.8 ($I_F=3.0\text{A}$)	1.2	3.5	TO-220F	1.7
YG805C10R	100	20 ($T_C=91^{\circ}\text{C}$)	100	-40 to +150	0.8 ($I_F=5.0\text{A}$)	2.5	2.5	TO-220F	1.7
YG808C10R	100	30 ($T_C=80^{\circ}\text{C}$)	180	-40 to +150	0.8 ($I_F=10\text{A}$)	20	2.0	TO-220F	1.7

() Conditions

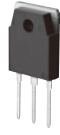
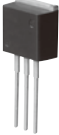
*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 Per element

*4 $V_R=V_{RRM}$ per element

Schottky Barrier Diodes (SBD)

Schottky Barrier Diodes (SBD)					TO-3P	TO-3PF	T-Pack (S)	T-Pack (L)
								
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (mA)				
Dual	40	10	0.55	5			✓	✓
		20	0.6	15			✓	
		30	0.55	20	✓	✓		
	60	30	0.58	20	✓	✓	✓	

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)			Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max. mA	$R_{th(j-c)}$ °C/W		
TP802C04R	40	10 ($T_C=116^{\circ}\text{C}$)	120	-40 to +150	0.55 ($I_F=4.0\text{A}$)	5	3.0	T-Pack (L)	1.6
TS802C04R	40	10 ($T_C=116^{\circ}\text{C}$)	120	-40 to +150	0.55 ($I_F=4.0\text{A}$)	5	3.0	T-Pack (S)	1.6
TS805C04R	40	20 ($T_C=110^{\circ}\text{C}$)	120	-40 to +150	0.6 ($I_F=10\text{A}$)	15	2.0	T-Pack (S)	1.6
ESAD83M-004RR	40	30 ($T_C=105^{\circ}\text{C}$)	150	-40 to +150	0.55 ($I_F=12.5\text{A}$)	20	1.7	TO-3PF	6.0
ESAD83-004R	40	30 ($T_C=118^{\circ}\text{C}$)	150	-40 to +150	0.55 ($I_F=12.5\text{A}$)	20	1.2	TO-3P	5.5
ESAD83M-006RR	60	30 ($T_C=106^{\circ}\text{C}$)	120	-40 to +150	0.58 ($I_F=12.5\text{A}$)	20	1.7	TO-3PF	6.0
TS808C06R	60	30 ($T_C=115^{\circ}\text{C}$)	120	-40 to +150	0.58 ($I_F=12.5\text{A}$)	20	1.2	T-Pack (S)	1.6
ESAD83-006R	60	30 ($T_C=119^{\circ}\text{C}$)	120	-40 to +150	0.58 ($I_F=12.5\text{A}$)	20	1.2	TO-3P	5.5

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 Per element

*4 $V_R=V_{RRM}$ per element

Ultra Low IR Schottky Barrier Diodes

Ultra Low IR Schottky Barrier Diodes					TO-220	TO-220F
						
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (mA)		
Dual	100	10	0.82	0.015	✓	✓
		20	0.86	0.02	✓	✓
		30	0.86	0.03	✓	✓
	120	10	0.84	0.015	✓	✓
		20	0.88	0.02	✓	✓
		30	0.88	0.03	✓	✓
	150	10	0.86	0.015	✓	✓
		20	0.89	0.02	✓	✓
		30	0.89	0.03	✓	✓
	200	10	0.89	0.015	✓	✓
		20	0.93	0.02	✓	✓
		30	0.93	0.03	✓	✓

2 in one-package (Dual)

Device type	Maximum rating		I_{FSM}^{*2} Amps.	Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)			Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.			V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max.mA	$R_{th(j-c)}$ °C/W		
YG872C10R	100	10 ($T_C=146^\circ\text{C}$)	125	-40 to +175	0.82	0.015	3.5	TO-220F	1.7
YA872C10R	100	10 ($T_C=158^\circ\text{C}$)	125	-40 to +175	0.82	0.015	2.0	TO-220	2.0
YG875C10R	100	20 ($T_C=131^\circ\text{C}$)	145	-40 to +175	0.86	0.020	2.5	TO-220F	1.7
YA875C10R	100	20 ($T_C=144^\circ\text{C}$)	145	-40 to +175	0.86	0.020	1.75	TO-220	2.0
YG878C10R	100	30 ($T_C=122^\circ\text{C}$)	160	-40 to +175	0.86	0.030	2.0	TO-220F	1.7
YA878C10R	100	30 ($T_C=142^\circ\text{C}$)	160	-40 to +175	0.86	0.030	1.25	TO-220	2.0
YG872C12R	120	10 ($T_C=146^\circ\text{C}$)	125	-40 to +175	0.84	0.015	3.5	TO-220F	1.7
YA872C12R	120	10 ($T_C=158^\circ\text{C}$)	125	-40 to +175	0.84	0.015	2.0	TO-220	2.0
YG875C12R	120	20 ($T_C=131^\circ\text{C}$)	145	-40 to +175	0.88	0.020	2.5	TO-220F	1.7
YA875C12R	120	20 ($T_C=144^\circ\text{C}$)	145	-40 to +175	0.88	0.020	1.75	TO-220	2.0
YG878C12R	120	30 ($T_C=121^\circ\text{C}$)	160	-40 to +175	0.88	0.030	2.0	TO-220F	1.7
YA878C12R	120	30 ($T_C=141^\circ\text{C}$)	160	-40 to +175	0.88	0.030	1.25	TO-220	2.0
YG872C15R	150	10 ($T_C=144^\circ\text{C}$)	125	-40 to +175	0.86	0.015	3.5	TO-220F	1.7
YA872C15R	150	10 ($T_C=157^\circ\text{C}$)	125	-40 to +175	0.86	0.015	2.0	TO-220	2.0
YG875C15R	150	20 ($T_C=130^\circ\text{C}$)	145	-40 to +175	0.89	0.020	2.5	TO-220F	1.7
YA875C15R	150	20 ($T_C=143^\circ\text{C}$)	145	-40 to +175	0.89	0.020	1.75	TO-220	2.0
YG878C15R	150	30 ($T_C=120^\circ\text{C}$)	160	-40 to +175	0.89	0.030	2.0	TO-220F	1.7
YA878C15R	150	30 ($T_C=140^\circ\text{C}$)	160	-40 to +175	0.89	0.030	1.25	TO-220	2.0
YG872C20R	200	10 ($T_C=143^\circ\text{C}$)	125	-40 to +175	0.89	0.015	3.5	TO-220F	1.7
YA872C20R	200	10 ($T_C=157^\circ\text{C}$)	125	-40 to +175	0.89	0.015	2.0	TO-220	2.0
YG875C20R	200	20 ($T_C=127^\circ\text{C}$)	145	-40 to +175	0.93	0.020	2.5	TO-220F	1.7
YA875C20R	200	20 ($T_C=141^\circ\text{C}$)	145	-40 to +175	0.93	0.020	1.75	TO-220	2.0
YG878C20R	200	30 ($T_C=116^\circ\text{C}$)	160	-40 to +175	0.93	0.030	2.0	TO-220F	1.7
YA878C20R	200	30 ($T_C=138^\circ\text{C}$)	160	-40 to +175	0.93	0.030	1.25	TO-220	2.0

() Conditions

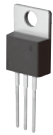
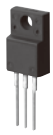
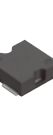
*1: 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2: Sine half wave, 10ms per element

*3: $I_F=0.5I_O$ per element

*4: $V_R=V_{RRM}$ per element

Low IR Schottky Barrier Diodes

Low IR Schottky Barrier Diodes					TO-220	TO-220F	TO-3P (Q)	TO-3PF	TO-247 (Type: A)	T-Pack (L)	T-Pack (S)	TFP
												
Chip	V _{RRM} (V)	I _O (A)	V _F (V)	I _R (mA)								
Single	120	5	0.88	0.15		✓						
	150	5	0.9	0.15		✓						
Dual	45	20	0.63	0.175	✓	✓					✓	✓
		30	0.63	0.2	✓	✓					✓	✓
		60	10	0.68	0.15	✓	✓				✓	
			20	0.74	0.175	✓	✓				✓	
			30	0.74	0.2	✓	✓				✓	
			40	0.7	0.2	✓	✓			✓		
	80	10	0.76	0.15	✓	✓					✓	✓
		20	0.76	0.175	✓	✓					✓	✓
		30	0.76	0.2	✓	✓					✓	
		40	0.71	0.2	✓	✓				✓		
	100	10	0.86	0.15	✓	✓					✓	
		20	0.86	0.175	✓	✓					✓	✓
		30	0.86	0.2	✓	✓	✓			✓	✓	✓
		40	0.82	0.2	✓	✓				✓		
	120	10	0.88	0.15	✓	✓			✓	✓	✓	
		20	0.88	0.15	✓	✓			✓	✓	✓	✓
		30	0.88	0.2	✓	✓			✓		✓	✓
		40	0.95	0.2	✓	✓						
	150	10	0.9	0.15	✓	✓				✓	✓	
		20	0.9	0.15	✓	✓		✓	✓	✓	✓	✓
		30	0.9	0.2	✓	✓	✓	✓	✓		✓	✓
		40	0.97	0.2	✓	✓						

1 in one-package (Single)

Device type	Maximum rating		I _{FSM} *2 Amps.	Thermal rating T _{vj} and T _{stg} °C	Characteristics (T _a =25°C)			Package	Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.			V _{FM} *3 max. Volts	I _{RRM} *4 max. mA	R _{th(j-c)} °C/W		
YG861S12R	120	5 (T _C =104°C)	75	-40 to +150	0.88	0.15	5.0	TO-220F	1.7
YG861S15R	150	5 (T _C =94°C)	75	-40 to +150	0.9	0.15	5.0	TO-220F	1.7

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms

*3 I_F=I_O

*4 V_R=V_{RRM}

Low IR Schottky Barrier Diodes

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)			Package	Net mass Grams
	V_{RRM} Volts	I_O *1 Amps.	I_{FSM} *2 Amps.		V_{FM} *3 max. Volts	I_{RRM} *4 max.mA	$R_{th(j-c)}$ °C/W		
YG865C04R	45	20 ($T_C=115^{\circ}\text{C}$)	145	-40 to +150	0.63	0.175	2.5	TO-220F	1.7
YA865C04R	45	20 ($T_C=125^{\circ}\text{C}$)	145	-40 to +150	0.63	0.175	1.75	TO-220	2.0
TS865C04R	45	20 ($T_C=126^{\circ}\text{C}$)	145	-40 to +150	0.63	0.175	1.75	T-Pack (S)	1.6
MS865C04	45	20 ($T_C=125^{\circ}\text{C}$)	145	-40 to +150	0.63	0.175	1.75	TFP	0.8
YG868C04R	45	30 ($T_C=105^{\circ}\text{C}$)	160	-40 to +150	0.63	0.2	2.0	TO-220F	1.7
YA868C04R	45	30 ($T_C=122^{\circ}\text{C}$)	160	-40 to +150	0.63	0.2	1.25	TO-220	2.0
TS868C04R	45	30 ($T_C=122^{\circ}\text{C}$)	160	-40 to +150	0.63	0.2	1.25	T-Pack (S)	1.6
MS868C04	45	30 ($T_C=122^{\circ}\text{C}$)	160	-40 to +150	0.63	0.2	1.25	TFP	0.8
YG862C06R	60	10 ($T_C=124^{\circ}\text{C}$)	125	-40 to +150	0.68	0.15	3.5	TO-220F	1.7
YA862C06R	60	10 ($T_C=124^{\circ}\text{C}$)	125	-40 to +150	0.68	0.15	2.0	TO-220	2.0
TS862C06R	60	10 ($T_C=136^{\circ}\text{C}$)	125	-40 to +150	0.68	0.15	2.0	T-Pack (S)	1.6
YG865C06R	60	20 ($T_C=109^{\circ}\text{C}$)	145	-40 to +150	0.74	0.175	2.5	TO-220F	1.7
YA865C06R	60	20 ($T_C=122^{\circ}\text{C}$)	145	-40 to +150	0.74	0.175	1.75	TO-220	2.0
TS865C06R	60	20 ($T_C=122^{\circ}\text{C}$)	145	-40 to +150	0.74	0.175	1.75	T-Pack (S)	1.6
YG868C06R	60	30 ($T_C=101^{\circ}\text{C}$)	160	-40 to +150	0.74	0.2	2.0	TO-220F	1.7
YA868C06R	60	30 ($T_C=119^{\circ}\text{C}$)	160	-40 to +150	0.74	0.2	1.25	TO-220	2.0
TS868C06R	60	30 ($T_C=119^{\circ}\text{C}$)	160	-40 to +150	0.74	0.2	1.25	T-Pack (S)	1.6
YG869C06R	60	40 ($T_C=105^{\circ}\text{C}$)	190	-40 to +150	0.7	0.2	1.2	TO-220F	1.7
YA869C06R	60	40 ($T_C=114^{\circ}\text{C}$)	190	-40 to +150	0.7	0.2	1.0	TO-220	2.0
TP869C06R	60	40 ($T_C=114^{\circ}\text{C}$)	190	-40 to +150	0.7	0.2	1.0	T-Pack (L)	1.6
YG862C08R	80	10 ($T_C=109^{\circ}\text{C}$)	125	-40 to +150	0.76	0.15	3.5	TO-220F	1.7
YA862C08R	80	10 ($T_C=126^{\circ}\text{C}$)	125	-40 to +150	0.76	0.15	2.0	TO-220	2.0
TS862C08R	80	10 ($T_C=126^{\circ}\text{C}$)	125	-40 to +150	0.76	0.15	2.0	T-Pack (S)	1.6
MS862C08	80	10 ($T_C=115^{\circ}\text{C}$)	125	-40 to +150	0.76	0.15	3.0	TFP	0.8
YG865C08R	80	20 ($T_C=89^{\circ}\text{C}$)	145	-40 to +150	0.76	0.175	2.5	TO-220F	1.7
YA865C08R	80	20 ($T_C=107^{\circ}\text{C}$)	145	-40 to +150	0.76	0.175	1.75	TO-220	2.0
TS865C08R	80	20 ($T_C=107^{\circ}\text{C}$)	145	-40 to +150	0.76	0.175	1.75	T-Pack (S)	1.6
MS865C08	80	20 ($T_C=108^{\circ}\text{C}$)	145	-40 to +150	0.76	0.175	1.75	TFP	0.8
YG868C08R	80	30 ($T_C=72^{\circ}\text{C}$)	160	-40 to +150	0.76	0.2	2.0	TO-220F	1.7
YA868C08R	80	30 ($T_C=105^{\circ}\text{C}$)	160	-40 to +150	0.76	0.2	1.25	TO-220	2.0
TS868C08R	80	30 ($T_C=105^{\circ}\text{C}$)	160	-40 to +150	0.76	0.2	1.25	T-Pack (S)	1.6
YG869C08R	80	40 ($T_C=86^{\circ}\text{C}$)	190	-40 to +150	0.71	0.2	1.2	TO-220F	1.7
YA869C08R	80	40 ($T_C=98^{\circ}\text{C}$)	190	-40 to +150	0.71	0.2	1.0	TO-220	2.0
TP869C08R	80	40 ($T_C=98^{\circ}\text{C}$)	190	-40 to +150	0.71	0.2	1.0	T-Pack (L)	1.6

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 $I_F=0.5I_O$ per element

*4 $V_R=V_{RRM}$ per element

Low IR Schottky Barrier Diodes

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)			Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max.mA	$R_{th(j-c)}$ °C/W		
YG862C10R	100	10 ($T_C=118^{\circ}\text{C}$)	125	-40 to +150	0.86	0.15	3.5	TO-220F	1.7
YA862C10R	100	10 ($T_C=132^{\circ}\text{C}$)	125	-40 to +150	0.86	0.15	2.0	TO-220	2.0
TS862C10R	100	10 ($T_C=132^{\circ}\text{C}$)	125	-40 to +150	0.86	0.15	2.0	T-Pack (S)	1.6
YG865C10R	100	20 ($T_C=103^{\circ}\text{C}$)	145	-40 to +150	0.86	0.175	2.5	TO-220F	1.7
YA865C10R	100	20 ($T_C=117^{\circ}\text{C}$)	145	-40 to +150	0.86	0.175	1.75	TO-220	2.0
TS865C10R	100	20 ($T_C=117^{\circ}\text{C}$)	145	-40 to +150	0.86	0.175	1.75	T-Pack (S)	1.6
MS865C10	100	20 ($T_C=117^{\circ}\text{C}$)	145	-40 to +150	0.86	0.175	1.75	TFP	0.8
YG868C10R	100	30 ($T_C=91^{\circ}\text{C}$)	160	-40 to +150	0.86	0.2	2.0	TO-220F	1.7
YA868C10R	100	30 ($T_C=113^{\circ}\text{C}$)	160	-40 to +150	0.86	0.2	1.25	TO-220	2.0
TS868C10R	100	30 ($T_C=113^{\circ}\text{C}$)	160	-40 to +150	0.86	0.2	1.25	T-Pack (S)	1.6
TP868C10R	100	30 ($T_C=113^{\circ}\text{C}$)	160	-40 to +150	0.86	0.2	1.25	T-Pack (L)	1.6
MS868C10	100	30 ($T_C=114^{\circ}\text{C}$)	160	-40 to +150	0.86	0.2	1.2	TFP	0.8
PA868C10R	100	30 ($T_C=107^{\circ}\text{C}$)	160	-40 to +150	0.86	0.2	1.5	TO-3P (Q)	5.1
YG869C10R	100	40 ($T_C=94^{\circ}\text{C}$)	190	-40 to +150	0.82	0.2	1.2	TO-220F	1.7
YA869C10R	100	40 ($T_C=105^{\circ}\text{C}$)	190	-40 to +150	0.82	0.2	1.0	TO-220	2.0
TP869C10R	100	40 ($T_C=105^{\circ}\text{C}$)	190	-40 to +150	0.82	0.2	1.0	T-Pack (L)	1.6
YG862C12R	120	10 ($T_C=122^{\circ}\text{C}$)	75	-40 to +150	0.88	0.15	3.0	TO-220F	1.7
YA862C12R	120	10 ($T_C=137^{\circ}\text{C}$)	75	-40 to +150	0.88	0.15	1.2	TO-220	2.0
TP862C12R	120	10 ($T_C=137^{\circ}\text{C}$)	75	-40 to +150	0.88	0.15	1.5	T-Pack (L)	1.6
TS862C12R	120	10 ($T_C=137^{\circ}\text{C}$)	75	-40 to +150	0.88	0.15	1.5	T-Pack (S)	1.6
YG865C12R	120	20 ($T_C=116^{\circ}\text{C}$)	150	-40 to +150	0.88	0.15	1.75	TO-220F	1.7
YA865C12R	120	20 ($T_C=126^{\circ}\text{C}$)	150	-40 to +150	0.88	0.15	1.25	TO-220	2.0
PH865C12	120	20 ($T_C=126^{\circ}\text{C}$)	150	-40 to +150	0.88	0.15	1.5	TO-247 (Type: A)	4.9
TP865C12R	120	20 ($T_C=126^{\circ}\text{C}$)	150	-40 to +150	0.88	0.15	1.25	T-Pack (L)	1.6
TS865C12R	120	20 ($T_C=126^{\circ}\text{C}$)	150	-40 to +150	0.88	0.15	1.25	T-Pack (S)	1.6
MS865C12	120	20 ($T_C=126^{\circ}\text{C}$)	150	-40 to +150	0.88	0.15	1.25	TFP	0.8
YG868C12R	120	30 ($T_C=116^{\circ}\text{C}$)	190	-40 to +150	0.88	0.2	1.2	TO-220F	1.7
YA868C12R	120	30 ($T_C=122^{\circ}\text{C}$)	190	-40 to +150	0.88	0.2	1.0	TO-220	2.0
PH868C12	120	30 ($T_C=122^{\circ}\text{C}$)	190	-40 to +150	0.88	0.2	1.2	TO-247 (Type: A)	4.9
TS868C12R	120	30 ($T_C=122^{\circ}\text{C}$)	190	-40 to +150	0.88	0.2	1.0	T-Pack (S)	1.6
MS868C12	120	30 ($T_C=115^{\circ}\text{C}$)	190	-40 to +150	0.88	0.2	1.2	TFP	0.8
YG869C12R	120	40 ($T_C=95^{\circ}\text{C}$)	190	-40 to +150	0.95	0.2	1.2	TO-220F	1.7
YA869C12R	120	40 ($T_C=104^{\circ}\text{C}$)	190	-40 to +150	0.95	0.2	1.0	TO-220	2.0
YG862C15R	150	10 ($T_C=117^{\circ}\text{C}$)	75	-40 to +150	0.9	0.15	3.0	TO-220F	1.7
YA862C15R	150	10 ($T_C=134^{\circ}\text{C}$)	75	-40 to +150	0.9	0.15	1.5	TO-220	2.0
TP862C15R	150	10 ($T_C=134^{\circ}\text{C}$)	75	-40 to +150	0.9	0.15	1.5	T-Pack (L)	1.6
TS862C15R	150	10 ($T_C=134^{\circ}\text{C}$)	75	-40 to +150	0.9	0.15	1.5	T-Pack (S)	1.6
YG865C15R	150	20 ($T_C=101^{\circ}\text{C}$)	150	-40 to +150	0.9	0.15	1.75	TO-220F	1.7
PH865C15	150	20 ($T_C=109^{\circ}\text{C}$)	150	-40 to +150	0.9	0.15	1.5	TO-247 (Type: A)	4.9
PG865C15R	150	20 ($T_C=80^{\circ}\text{C}$)	150	-40 to +150	0.9	0.15	2.5	TO-3PF	6.0
YA865C15R	150	20 ($T_C=115^{\circ}\text{C}$)	150	-40 to +150	0.9	0.15	1.25	TO-220	2.0
TP865C15R	150	20 ($T_C=115^{\circ}\text{C}$)	150	-40 to +150	0.9	0.15	1.25	T-Pack (L)	1.6
TS865C15R	150	20 ($T_C=115^{\circ}\text{C}$)	150	-40 to +150	0.9	0.15	1.25	T-Pack (S)	1.6
MS865C15	150	20 ($T_C=115^{\circ}\text{C}$)	150	-40 to +150	0.9	0.15	1.25	TFP	0.8
YG868C15R	150	30 ($T_C=113^{\circ}\text{C}$)	190	-40 to +150	0.9	0.2	1.2	TO-220F	1.7
YA868C15R	150	30 ($T_C=119^{\circ}\text{C}$)	190	-40 to +150	0.9	0.2	1.0	TO-220	2.0
TS868C15R	150	30 ($T_C=119^{\circ}\text{C}$)	190	-40 to +150	0.9	0.2	1.0	T-Pack (S)	1.6
MS868C15	150	30 ($T_C=113^{\circ}\text{C}$)	190	-40 to +150	0.9	0.2	1.2	TFP	0.8
PA868C15R	150	30 ($T_C=129^{\circ}\text{C}$)	190	-40 to +150	0.9	0.2	1.2	TO-3P	5.5
PH868C15	150	30 ($T_C=129^{\circ}\text{C}$)	190	-40 to +150	0.9	0.2	1.2	TO-247 (Type: A)	4.9
YG869C15R	150	40 ($T_C=90^{\circ}\text{C}$)	190	-40 to +150	0.97	0.2	1.2	TO-220F	1.7
YA869C15R	150	40 ($T_C=100^{\circ}\text{C}$)	190	-40 to +150	0.97	0.2	1.0	TO-220	2.0

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 $I_F=0.5I_O$ per element

*4 $V_R=V_{RRM}$ per element

Super LLD2 (For Critical conduction mode PFC)

Super LLD 2 (For Critical conduction mode PFC)						TO-220	TO-220F	TO-247 (Type: A)
								
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)	t_{rr} (μsec)			
Single	600	8	1.55	10	0.05	✓	✓	
		10	1.55	10	0.05	✓	✓	
	800	5	2.2	10	0.05		✓	
Dual	600	10	1.55	10	0.05	✓	✓	✓

1 in one-package (Single)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM} max. Volts	I_{RRM}^{*3} max. μA	t_{rr} μsec.	$R_{th(j-c)}$ °C/W		
YA971S6R	600	8 ($T_c=116^\circ\text{C}$)	70	-40 to +150	1.55 ($I_F=8\text{A}$)	10	0.05	2.5	TO-220	2.0
YG971S6R	600	8 ($T_c=89^\circ\text{C}$)	70	-40 to +150	1.55 ($I_F=8\text{A}$)	10	0.05	4.5	TO-220F	1.7
YA972S6R	600	10 ($T_c=115^\circ\text{C}$)	100	-40 to +150	1.55 ($I_F=10\text{A}$)	10	0.05	2.0	TO-220	2.0
YG972S6R	600	10 ($T_c=89^\circ\text{C}$)	100	-40 to +150	1.55 ($I_F=10\text{A}$)	10	0.05	3.5	TO-220F	1.7
YG971S8R	800	5 ($T_c=93^\circ\text{C}$)	60	-40 to +150	2.2 ($I_F=5\text{A}$)	10	0.05	4.5	TO-220F	1.7

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms

*3 $V_R=V_{RRM}$

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM} max. Volts	I_{RRM}^{*3} max. μA	t_{rr} μsec.	$R_{th(j-c)}$ °C/W		
YA975C6R	600	20 ($T_c=106^\circ\text{C}$)	100	-40 to +150	1.55 ($I_F=10\text{A}$)	10	0.05	1.25	TO-220	2.0
YG975C6R	600	20 ($T_c=89^\circ\text{C}$)	100	-40 to +150	1.55 ($I_F=10\text{A}$)	10	0.05	1.75	TO-220F	1.7
PH975C6	600	20 ($T_c=97^\circ\text{C}$)	100	-40 to +150	1.55 ($I_F=10\text{A}$)	10	0.05	1.5	TO-247 (Type: A)	4.9

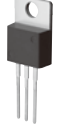
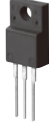
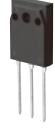
() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 $V_R=V_{RRM}$ per element

■ Super LLD3 (For Continuous conduction mode PFC)

Super LLD 3 (For Continuous conduction mode PFC)						TO-220	TO-220F	TO-247 (Type: A)	T-Pack (S)
									
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)	t_{rr} (μsec)				
Single	600	8	3.0	25	0.026	✓	✓		
		10	3.0	30	0.028	✓	✓		
Dual	600	16	3.0	25	0.026	✓	✓		✓
		20	3.0	30	0.028	✓	✓	✓	✓

1 in one-package (Single)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM} max. Volts	I_{RRM}^{*3} max. μA	t_{rr} μ sec.	$R_{th(j-c)}$ °C/W		
YA981S6R	600	8 ($T_c=99^{\circ}\text{C}$)	40	-40 to +150	3.0 ($I_F=8\text{A}$)	25	0.026	2.5	TO-220	2.0
YG981S6R	600	8 ($T_c=58^{\circ}\text{C}$)	40	-40 to +150	3.0 ($I_F=8\text{A}$)	25	0.026	4.5	TO-220F	1.7
YA982S6R	600	10 ($T_c=99^{\circ}\text{C}$)	50	-40 to +150	3.0 ($I_F=10\text{A}$)	30	0.028	2.0	TO-220	2.0
YG982S6R	600	10 ($T_c=60^{\circ}\text{C}$)	50	-40 to +150	3.0 ($I_F=10\text{A}$)	30	0.028	3.5	TO-220F	1.7

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms

*3 $V_R=V_{RRM}$

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM} max. Volts	I_{RRM}^{*3} max. μA	t_{rr} μ sec.	$R_{th(j-c)}$ °C/W		
YA982C6R	600	16 ($T_c=88^{\circ}\text{C}$)	40	-40 to +150	3.0 ($I_F=8\text{A}$)	25	0.026	1.5	TO-220	2.0
TS982C6R	600	16 ($T_c=88^{\circ}\text{C}$)	40	-40 to +150	3.0 ($I_F=8\text{A}$)	25	0.026	1.5	T-Pack (S)	1.6
YG982C6R	600	16 ($T_c=68^{\circ}\text{C}$)	40	-40 to +150	3.0 ($I_F=8\text{A}$)	25	0.026	2	TO-220F	1.7
YA985C6R	600	20 ($T_c=86^{\circ}\text{C}$)	50	-40 to +150	3.0 ($I_F=10\text{A}$)	30	0.028	1.25	TO-220	2.0
TS985C6R	600	20 ($T_c=86^{\circ}\text{C}$)	50	-40 to +150	3.0 ($I_F=10\text{A}$)	30	0.028	1.25	T-Pack (S)	1.6
YG985C6R	600	20 ($T_c=60^{\circ}\text{C}$)	50	-40 to +150	3.0 ($I_F=10\text{A}$)	30	0.028	1.75	TO-220F	1.7
PH985C6	600	20 ($T_c=73^{\circ}\text{C}$)	50	-40 to +150	3.0 ($I_F=10\text{A}$)	30	0.028	1.5	TO-247 (Type: A)	4.9

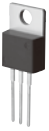
() Conditions

*1 50Hz Square wave duty 1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 $V_R=V_{RRM}$ per element

Low-Loss Fast Recovery Diodes (LLD)

Low-Loss Fast Recovery Diodes (LLD)						TO-220F	K-Pack (L)	K-Pack (S)	TFP
									
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)	t_{rr} (μsec)				
Single	200	5	0.95	100	0.035	✓	✓	✓	
		10	0.98	200	0.035	✓			
	300	5	1.2	100	0.035	✓			
Dual	200	5	0.95	100	0.035	✓	✓	✓	
		10	0.95	100	0.035	✓			
		20	0.98	200	0.035	✓			✓
	300	5	1.2	100	0.035	✓			
		10	1.2	100	0.035	✓			
		20	1.2	200	0.035				✓

1 in one-package (Single)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max. μA	t_{rr} μ sec.	$R_{th(j-c)}$ °C/W		
KP926S2	200	5 ($T_c=106^\circ\text{C}$)	70	-40 to +150	0.95	100	0.035	10.0	K-Pack (L)	0.6
KS926S2	200	5 ($T_c=106^\circ\text{C}$)	70	-40 to +150	0.95	100	0.035	10.0	K-Pack (S)	0.6
YG911S2R	200	5 ($T_c=134^\circ\text{C}$)	50	-40 to +150	0.95	100	0.035	3.5	TO-220F	1.7
YG912S2R	200	10 ($T_c=116^\circ\text{C}$)	80	-40 to +150	0.98	200	0.035	3.5	TO-220F	1.7
YG911S3R	300	5 ($T_c=101^\circ\text{C}$)	40	-40 to +150	1.2	100	0.035	3.5	TO-220F	1.7

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms

*3 $I_F=I_O$ per element*4 $V_R=V_{RRM}$

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max. μA	t_{rr} μ sec.	$R_{th(j-c)}$ °C/W		
KP923C2	200	5 ($T_c=103^\circ\text{C}$)	50	-40 to +150	0.95	100	0.035	10.0	K-Pack (L)	0.6
KS923C2	200	5 ($T_c=103^\circ\text{C}$)	50	-40 to +150	0.95	100	0.035	10.0	K-Pack(S)	0.6
YG901C2R	200	5 ($T_c=120^\circ\text{C}$)	25	-40 to +150	0.95	100	0.035	5.0	TO-220F	1.7
YG902C2R	200	10 ($T_c=115^\circ\text{C}$)	50	-40 to +150	0.95	100	0.035	3.5	TO-220F	1.7
YG906C2R	200	20 ($T_c=102^\circ\text{C}$)	80	-40 to +150	0.98	200	0.035	2.5	TO-220F	1.7
MS906C2	200	20 ($T_c=105^\circ\text{C}$)	80	-40 to +150	0.98	200	0.035	2.0	TFP	0.8
YG901C3R	300	5 ($T_c=105^\circ\text{C}$)	25	-40 to +150	1.2	100	0.035	5.0	TO-220F	1.7
YG902C3R	300	10 ($T_c=101^\circ\text{C}$)	40	-40 to +150	1.2	100	0.035	3.5	TO-220F	1.7
MS906C3	300	20 ($T_c=95^\circ\text{C}$)	80	-40 to +150	1.2	200	0.035	2.0	TFP	0.8

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 $I_F=0.5I_O$ per element*4 $V_R=V_{RRM}$ per element

Low-Loss Fast Recovery Diodes (LLD)

Low-Loss Fast Recovery Diodes (LLD)						TO-3P	TO-3PF	T-Pack (S)	T-Pack (L)
									
Chip	V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)	t _{rr} (μsec)				
Dual	200	5	0.95	100	0.035				✓
		10	0.95	100	0.035			✓	✓
		20	0.95	200	0.04	✓	✓		
		20	0.98	200	0.035			✓	✓
	300	10	1.2	100	0.035			✓	✓
		20	1.2	200	0.04	✓	✓		
		30	1.2	300	0.04	✓			
		60	1.2	600	0.04	✓			
	400	20	1.5	500	0.05	✓			

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)				Package	Net mass
	V_{RRM}	I_O^{*1}	I_{FSM}^{*2}		V_{FM}^{*3}	I_{RRM}^{*4}	t_{rr}	$R_{th(j-c)}$		
	Volts	Amps.	Amps.		max. Volts	max. μA	$\mu\text{sec.}$	°C/W		
TP901C2R	200	5 ($T_C=120^{\circ}\text{C}$)	25	-40 to +150	0.95 ($I_F=2.5\text{A}$)	100	0.035	5.0	T-Pack (L)	1.6
TP902C2R	200	10 ($T_C=125^{\circ}\text{C}$)	50	-40 to +150	0.95 ($I_F=5\text{A}$)	100	0.035	2.5	T-Pack (L)	1.6
TS902C2R	200	10 ($T_C=125^{\circ}\text{C}$)	50	-40 to +150	0.95 ($I_F=5\text{A}$)	100	0.035	2.5	T-Pack (S)	1.6
ESAD92M-02RR	200	20 ($T_C=108^{\circ}\text{C}$)	100	-40 to +150	0.95 ($I_F=10\text{A}$)	200	0.04	2.0	TO-3PF	6.0
TP906C2R	200	20 ($T_C=110^{\circ}\text{C}$)	80	-40 to +150	0.98 ($I_F=10\text{A}$)	200	0.035	2.0	T-Pack (L)	1.6
TS906C2R	200	20 ($T_C=110^{\circ}\text{C}$)	80	-40 to +150	0.98 ($I_F=10\text{A}$)	200	0.035	2.0	T-Pack (S)	1.6
ESAD92-02R	200	20 ($T_C=115^{\circ}\text{C}$)	100	-40 to +150	0.95 ($I_F=10\text{A}$)	200	0.04	1.5	TO-3P	5.5
TP902C3R	300	10 ($T_C=115^{\circ}\text{C}$)	40	-40 to +150	1.2 ($I_F=5\text{A}$)	100	0.035	2.5	T-Pack (L)	1.6
TS902C3R	300	10 ($T_C=115^{\circ}\text{C}$)	40	-40 to +150	1.2 ($I_F=5\text{A}$)	100	0.035	2.5	T-Pack (S)	1.6
ESAD92-03R	300	20 ($T_C=110^{\circ}\text{C}$)	80	-40 to +150	1.2 ($I_F=10\text{A}$)	200	0.04	1.5	TO-3P	5.5
ESAD92M-03RR	300	20 ($T_C=96^{\circ}\text{C}$)	80	-40 to +150	1.2 ($I_F=10\text{A}$)	200	0.04	2.0	TO-3PF	6.0
ESAE92-03R	300	30 ($T_C=99^{\circ}\text{C}$)	115	-40 to +150	1.2 ($I_F=15\text{A}$)	300	0.04	1.2	TO-3P	5.5
ESAF92-03R	300	60 ($T_C=86^{\circ}\text{C}$)	240	-40 to +150	1.2 ($I_F=30\text{A}$)	600	0.04	0.75	TO-3P	5.5
PA905C4R	400	20 ($T_C=107^{\circ}\text{C}$)	70	-40 to +150	1.5 ($I_F=10\text{A}$)	500	0.05	1.5	TO-3P	5.5

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 per element

*4 V_R=V_{RRM} per element

Low-Loss Fast Soft Recovery Diodes (LLD)

Low-Loss Fast Soft Recovery Diodes (LLD)						TO-220	TO-220F	TO-3PF	T-Pack (S)	K-Pack (S)	TFP
											
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)	t_{rr} (μsec)						
Single	300	5	1.3	20	0.04					✓	
	400	5	1.45	20	0.05					✓	
Dual	300	10	1.3	20	0.04	✓	✓		✓		
		20	1.3	35	0.04	✓	✓	✓	✓		✓
	400	10	1.45	20	0.05	✓	✓		✓		
		20	1.45	35	0.05	✓	✓	✓	✓		✓

1 in one-package (Single)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}C$)				Package	Net mass
	V_{RRM}	I_O^{*1}	I_{FSM}^{*2}		V_{FM}^{*3}	I_{RRM}^{*4}	t_{rr}	$R_{th(j-c)}$		
	Volts	Amps.	Amps.		max. Volts	max. μA	μ sec.	°C/W		Grams
KS986S3	300	5 ($T_C=128^{\circ}C$)	90	-40 to +150	1.3	20	0.04	3.5	K-Pack(S)	0.6
KS986S4	400	5 ($T_C=125^{\circ}C$)	80	-40 to +150	1.45	20	0.05	3.5	K-Pack(S)	0.6

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms

*3 $I_F=I_O$ per element

*4 $V_R=V_{RRM}$

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^{\circ}\text{C}$)				Package	Net mass Grams
	V_{RRM}	I_O *1	I_{FSM} *2		V_{FM} *3	I_{RRM} *4	t_{rr}	$R_{th(j-c)}$		
	Volts	Amps.	Amps.		max. Volts	max. μA	$\mu\text{ sec.}$	°C/W		
YG982C3R	300	10 ($T_C=112^{\circ}\text{C}$)	90	-40 to +150	1.3	20	0.04	3	TO-220F	1.7
YA982C3R	300	10 ($T_C=128^{\circ}\text{C}$)	90	-40 to +150	1.3	20	0.04	1.75	TO-220	2.0
TS982C3R	300	10 ($T_C=128^{\circ}\text{C}$)	90	-40 to +150	1.3	20	0.04	1.75	T-Pack (S)	1.6
YG985C3R	300	20 ($T_C=105^{\circ}\text{C}$)	110	-40 to +150	1.3	35	0.04	1.75	TO-220F	1.7
YA985C3R	300	20 ($T_C=118^{\circ}\text{C}$)	110	-40 to +150	1.3	35	0.04	1.25	TO-220	2.0
TS985C3R	300	20 ($T_C=118^{\circ}\text{C}$)	110	-40 to +150	1.3	35	0.04	1.25	T-Pack (S)	1.6
MS985C3	300	20 ($T_C=118^{\circ}\text{C}$)	110	-40 to +150	1.3	35	0.04	1.25	TFP	0.8
PG985C3R	300	20 ($T_C=73^{\circ}\text{C}$)	110	-40 to +150	1.3	35	0.04	3	TO-3PF	6.0
YG982C4R	400	10 ($T_C=107^{\circ}\text{C}$)	80	-40 to +150	1.45	20	0.05	3	TO-220F	1.7
YA982C4R	400	10 ($T_C=125^{\circ}\text{C}$)	80	-40 to +150	1.45	20	0.05	1.75	TO-220	2.0
TS982C4R	400	10 ($T_C=125^{\circ}\text{C}$)	80	-40 to +150	1.45	20	0.05	1.75	T-Pack (S)	1.6
YG985C4R	400	20 ($T_C=100^{\circ}\text{C}$)	100	-40 to +150	1.45	35	0.05	1.75	TO-220F	1.7
YA985C4R	400	20 ($T_C=114^{\circ}\text{C}$)	100	-40 to +150	1.45	35	0.05	1.25	TO-220	2.0
TS985C4R	400	20 ($T_C=114^{\circ}\text{C}$)	100	-40 to +150	1.45	35	0.05	1.25	T-Pack (S)	1.6
MS985C4	400	20 ($T_C=114^{\circ}\text{C}$)	100	-40 to +150	1.45	35	0.05	1.25	TFP	0.8
PG985C4R	400	20 ($T_C=64^{\circ}\text{C}$)	100	-40 to +150	1.45	35	0.05	3	TO-3PF	6.0

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine half wave, 10ms per element

*3 $I_F=0.5I_O$ per element

*4 $V_R=V_{RRM}$ per element

Ultra Fast Recovery Diodes

Ultra Fast Recovery Diodes						TO-220	TO-247-2 (Type: B)	TO-247 (Type: B)	TO-247-2 (Type: A)
									
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)	t_{rr} (μsec)				
Single	600	15	2.6	250	0.031	✓	✓		
		25	2.6	250	0.033	✓	✓		
		35	2.6	250	0.036		✓		
		75	2.95	250	0.060				✓
Dual	600	60	3.2	250	0.060				✓
		70	2.6	250	0.036			✓	

1 in one-package (Single)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max. μA	t_{rr} μ sec.	$R_{th(j-c)}$ °C/W		
FDRP15S60L	600	15 ($T_C=98^\circ\text{C}$)	110	-40 to +150	2.6	250	0.031	1.6	TO-220	2.0
FDRW15S60L	600	15 ($T_C=85^\circ\text{C}$)	110	-40 to +150	2.6	250	0.031	2.0	TO-247-2 (Type: B)	4.9
FDRP25S60L	600	25 ($T_C=86^\circ\text{C}$)	125	-40 to +150	2.6	250	0.033	1.2	TO-220	2.0
FDRW25S60L	600	25 ($T_C=86^\circ\text{C}$)	125	-40 to +150	2.6	250	0.033	1.2	TO-247-2 (Type: B)	4.9
FDRW35S60L	600	35 ($T_C=91^\circ\text{C}$)	140	-40 to +150	2.6	250	0.036	0.8	TO-247-2 (Type: B)	4.9
FDRW75T60L	600	75 ($T_C=50^\circ\text{C}$)	300	-40 to +150	2.95	250	0.060	0.57	TO-247-2 (Type: A)	4.9
FDRW60T65L	650	60 ($T_C=49^\circ\text{C}$)	250	-40 to +150	3.2	250	0.060	0.68	TO-247-2 (Type: A)	4.9

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms 1shot

*3 $I_F=I_O$

*4 $V_R=V_{RRM}$

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} max. Volts	I_{RRM}^{*4} max. μA	t_{rr}^{*5} μ sec.	$R_{th(j-c)}$ °C/W		
FDRW50C60L	600	50 ($T_C=86^\circ\text{C}$)	125	-40 to +150	2.6	250	0.033	0.6	TO-247 (Type: B)	4.9
FDRW70C60L	600	70 ($T_C=91^\circ\text{C}$)	140	-40 to +150	2.6	250	0.036	0.4	TO-247 (Type: B)	4.9

() Conditions

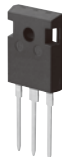
*1 50Hz Square wave duty=1/2, Output Current of center tap full wave connection

*2 Sine half wave, 10ms 1shot, Rating per element

*3 $I_F=0.5 I_O$, Rating per element

*4 $V_R=V_{RRM}$, Rating per element

Soft Recovery Fast Recovery Diodes

Soft Recovery Fast Recovery Diodes						TO-247-2 (Type: B)	TO-247 (Type: B)
							
Chip	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)	t_{rr} (μsec)		
Single	1200	12	2.8	250	0.042	✓	
		20	2.8	250	0.055	✓	
		30	2.8	250	0.063	✓	
Dual	1200	40	2.8	250	0.055		✓
		60	2.8	250	0.063		✓

1 in one-package (Single)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM}	I_O^{*1}	I_{FSM}^{*2}		V_{FM}^{*3}	I_{RRM}^{*4}	t_{rr}	$R_{th(j-c)}$		
	Volts	Amps.	Amps.		max. Volts	max. μA	μ sec.	°C/W		
FDRW12S120J	1200	12 ($T_C=97^\circ\text{C}$)	100	-40 to +150	2.8	250	0.042	1.6	TO-247-2 (Type: B)	4.9
FDRW20S120J	1200	20 ($T_C=88^\circ\text{C}$)	120	-40 to +150	2.8	250	0.055	1.2	TO-247-2 (Type: B)	4.9
FDRW30S120J	1200	30 ($T_C=89^\circ\text{C}$)	150	-40 to +150	2.8	250	0.063	0.781	TO-247-2 (Type: B)	4.9

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine half wave, 10ms 1shot

*3 $I_F=I_O$

*4 $V_R=V_{RRM}$

2 in one-package (Dual)

Device type	Maximum rating			Thermal rating T_{vj} and T_{stg} °C	Characteristics ($T_a=25^\circ\text{C}$)				Package	Net mass Grams
	V_{RRM}	I_O^{*1}	I_{FSM}^{*2}		V_{FM}^{*3}	I_{RRM}^{*4}	t_{rr}	$R_{th(j-c)}$		
	Volts	Amps.	Amps.		max. Volts	max. μA	μ sec.	°C/W		
FDRW40C120J	1200	40 ($T_C=98^\circ\text{C}$)	120	-40 to +150	2.8	250	0.055	0.5	TO-247 (Type: B)	4.9
FDRW60C120J	1200	60 ($T_C=87^\circ\text{C}$)	150	-40 to +150	2.8	250	0.063	0.4	TO-247 (Type: B)	4.9

() Conditions

*1 50Hz Square wave duty=1/2, Output Current of center tap full wave connection

*2 Sine half wave, 10ms 1shot, Rating per element

*3 $I_F=0.5 I_O$, Rating per element

*4 $V_R=V_{RRM}$, Rating per element

6

Pressure Sensors

Pressure Sensors	132
------------------------	-----

Fuji Electric
Power
Semiconductors

Pressure Sensors



Fuji Electric's pressure sensors combine piezo resistance, compensation circuits, and EMC protection on single chip and contribute to reduction of system size. They operate in wide pressure range and are applicable to various uses.



Features of Pressure Sensors

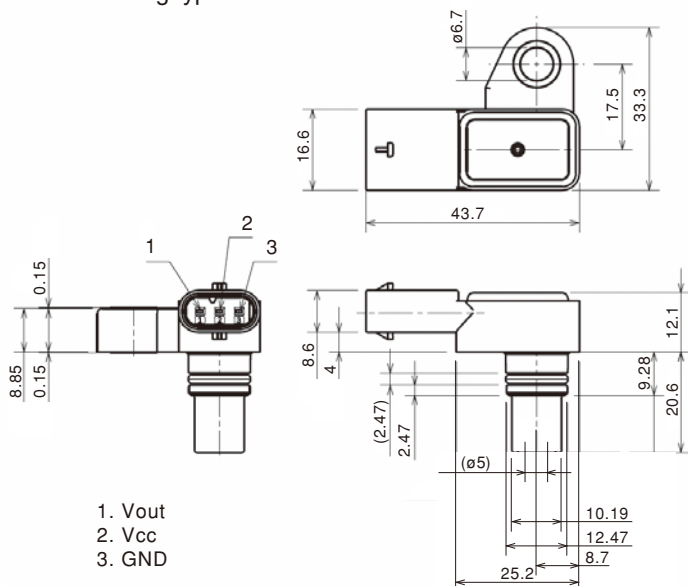
- Absolute pressure measurement
- High accuracy with digital trimming
- Wide pressure range, full scale of 100kPa to 300kPa
- Provided with overvoltage protection circuit, EMC filter, and surge protective device in the sensor chip
- Diagnostic self-detecting function in the event of a wire opened among Vcc, Vout and GND terminals
- High reliability ensured by EPROM bit redundancy

Products

Device type	Max. applied voltage (kPa.abs)	Allowable voltage (V)	Operating temperature (°C)	Operating pressure (kPa.abs)	Operating voltage (V)	Output Voltage range (V)	Absolute pressure/Relative pressure	Package
EPL4PC-R3S	500	7	-40 to 125	20 to 106.7	5.0±0.25	0.789 to 4.211	Absolute pressure	Assembly type
EPL6GC-R3S	500	7	-40 to 125	25 to 242	5.0±0.25	0.5 to 4.5	Absolute pressure	Assembly type

Dimensions, mm

Direct mounting type



7

Fuji Electric
Power
Semiconductors

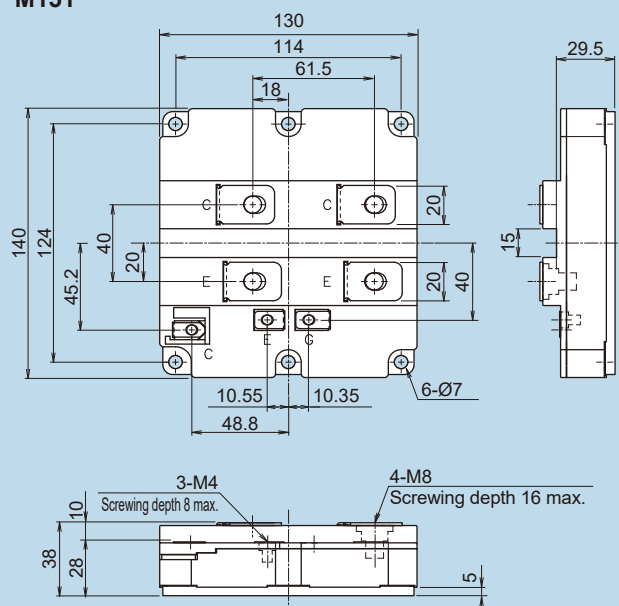
Outline

Power devices	134
Power Supply Control IC.....	148
Discrete devices.....	150

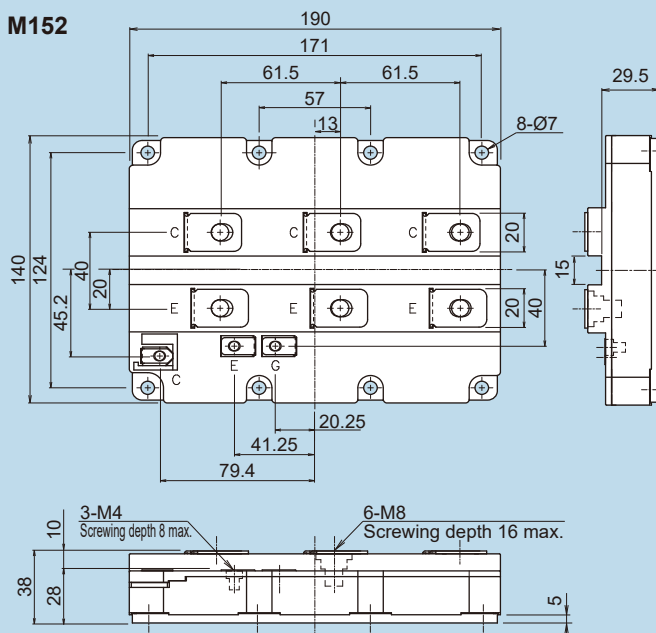
Power devices

Unit: mm

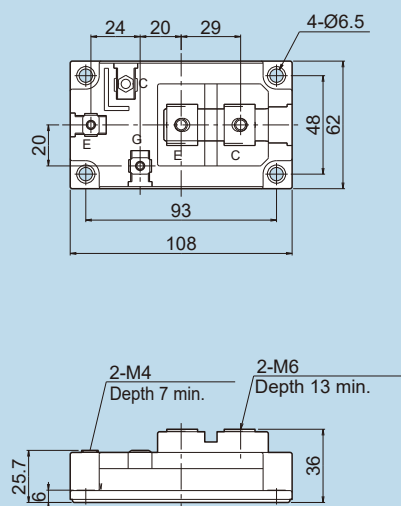
M151



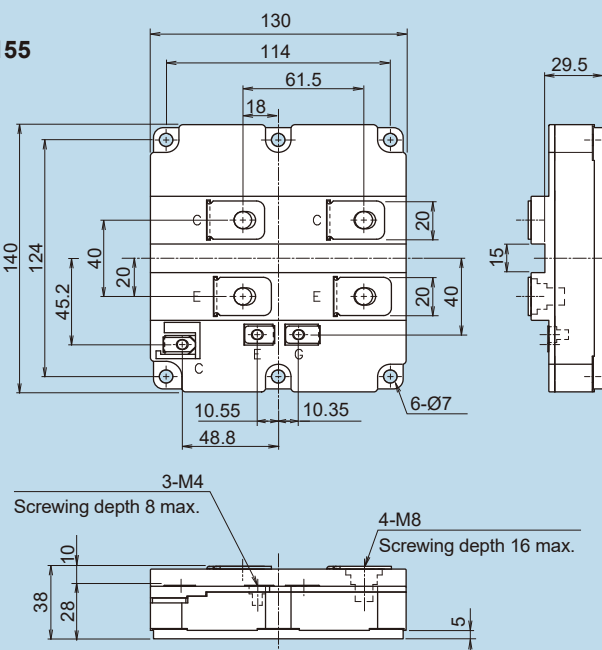
M152



M153

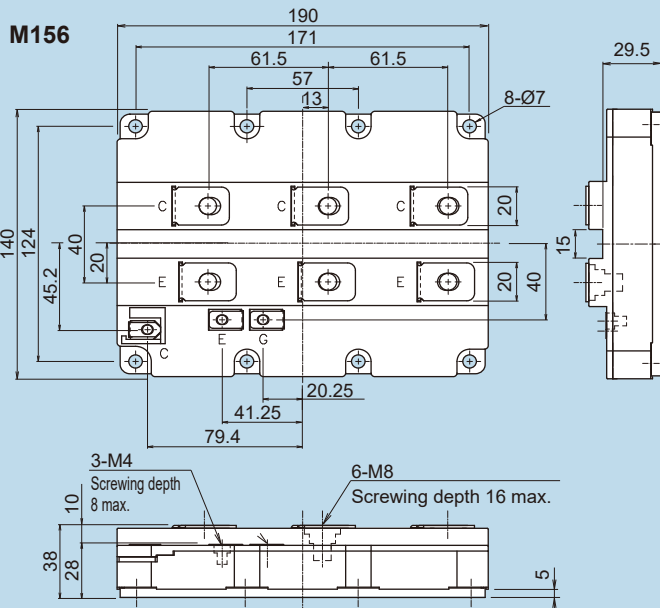
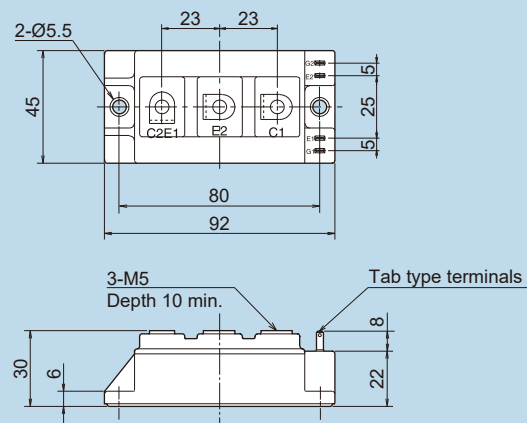
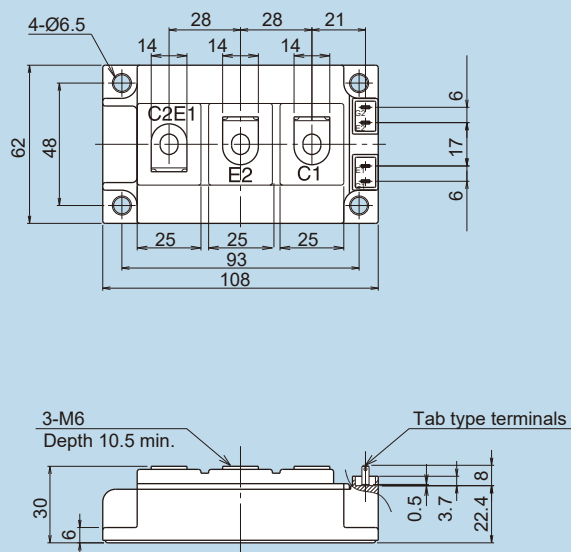
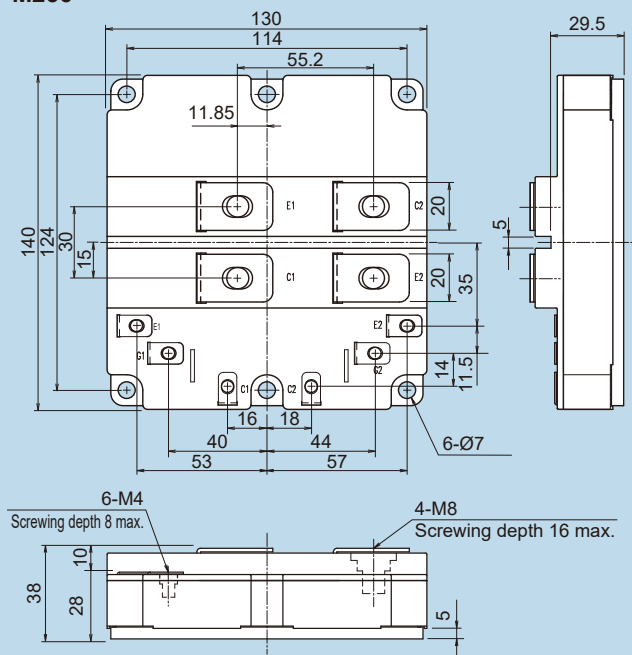
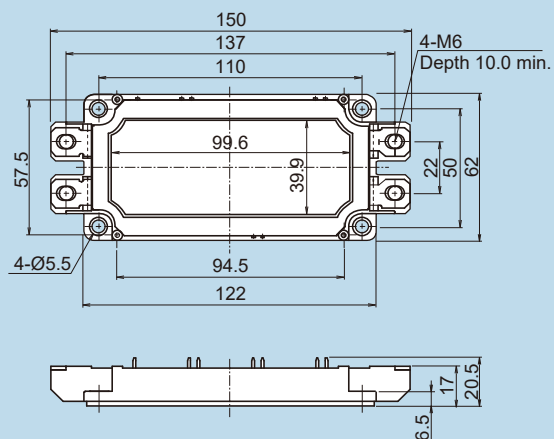


M155



Power devices

Unit: mm

**M233****M249****M256****M254**

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

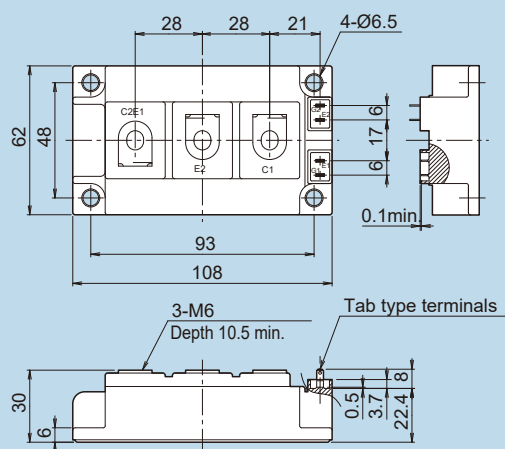
Outline

Index • Others

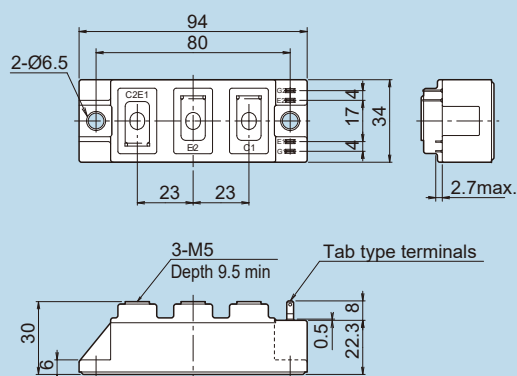
Power devices

Unit: mm

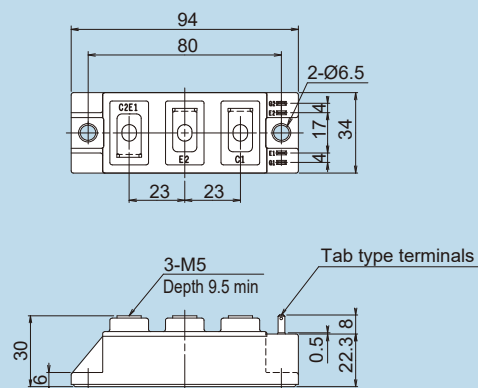
M259



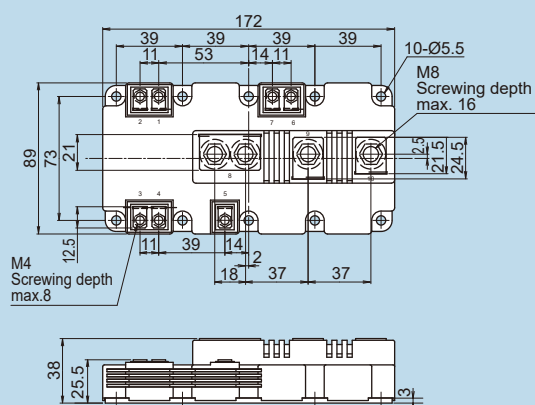
M262



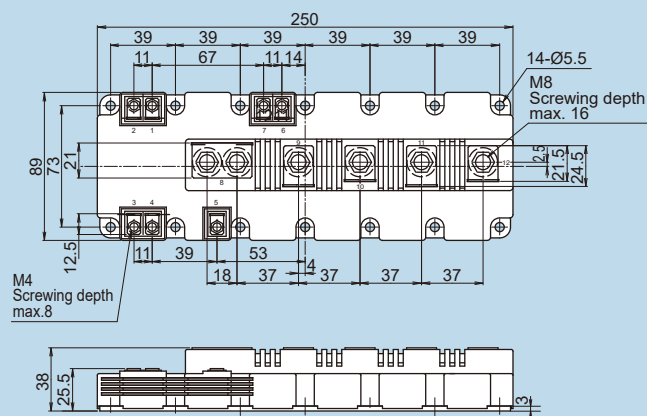
M263



M271



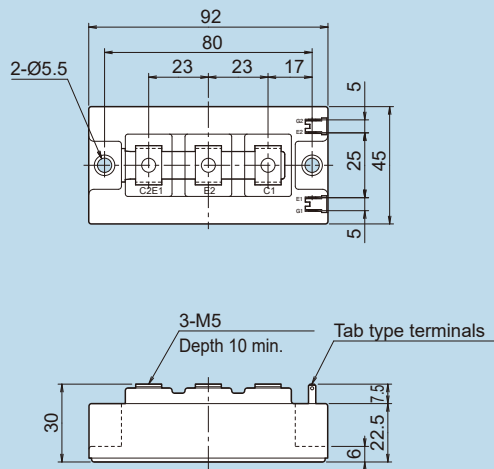
M272



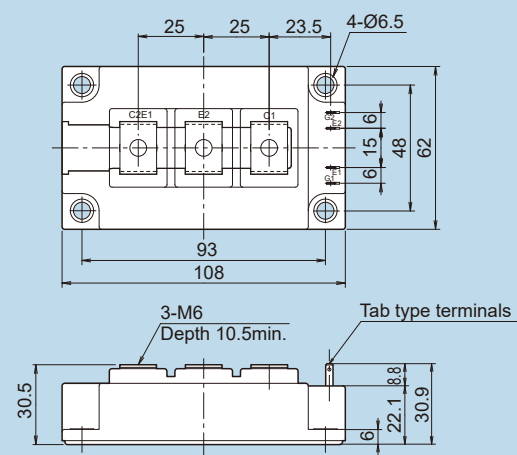
Power devices

Unit: mm

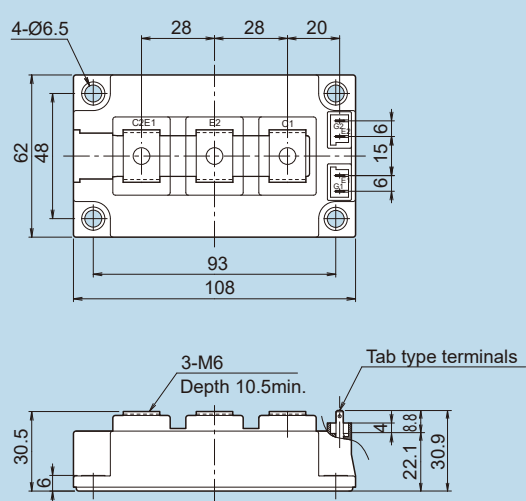
M274



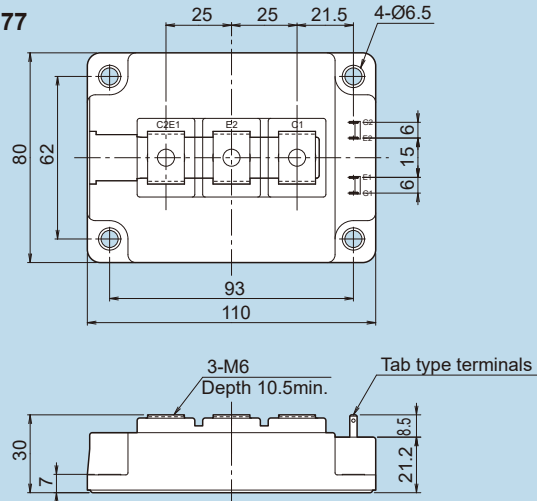
M275



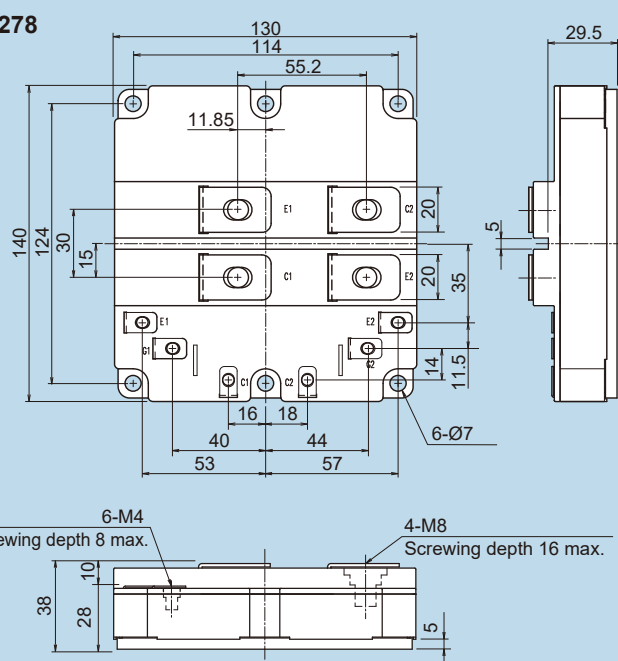
M276



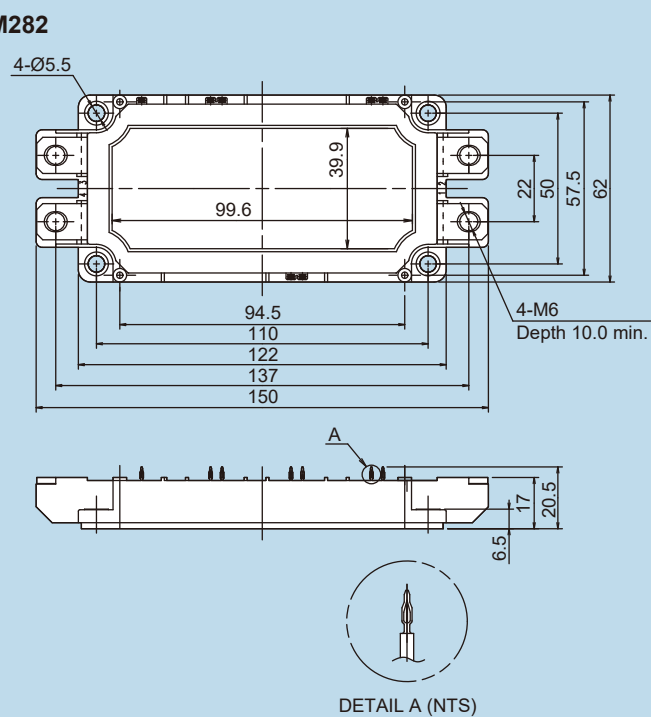
M277



M278



M282



DETAIL A (NTS)

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

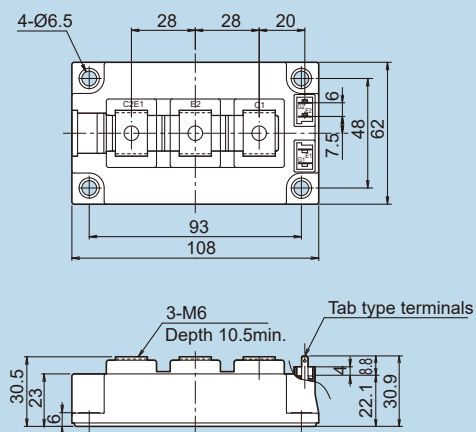
Outline

Index • Others

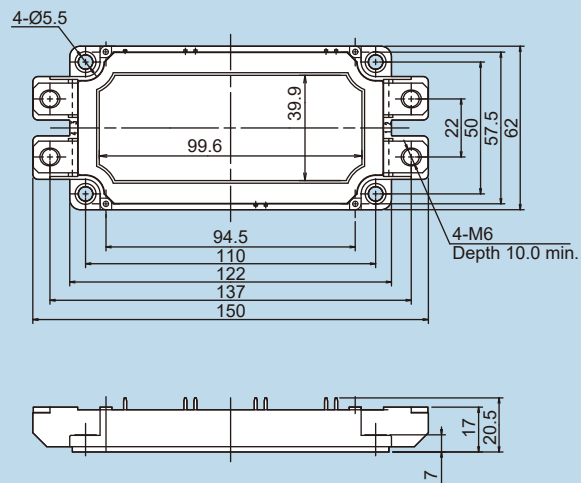
Power devices

Unit: mm

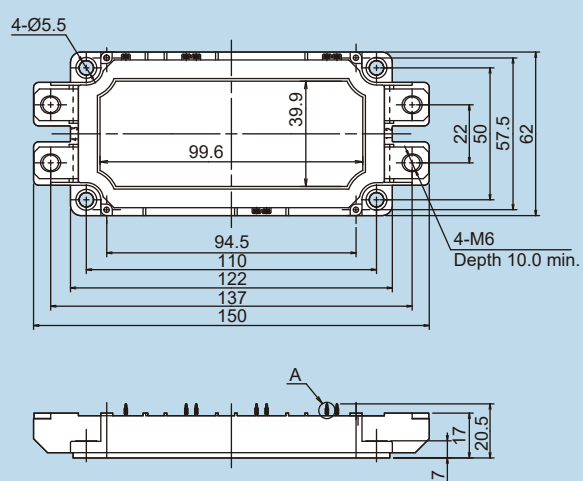
M283



M285



M286

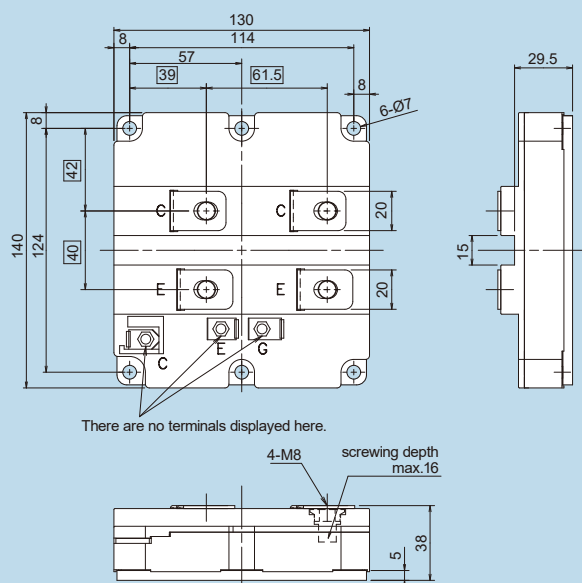


DETAIL A (NTS)

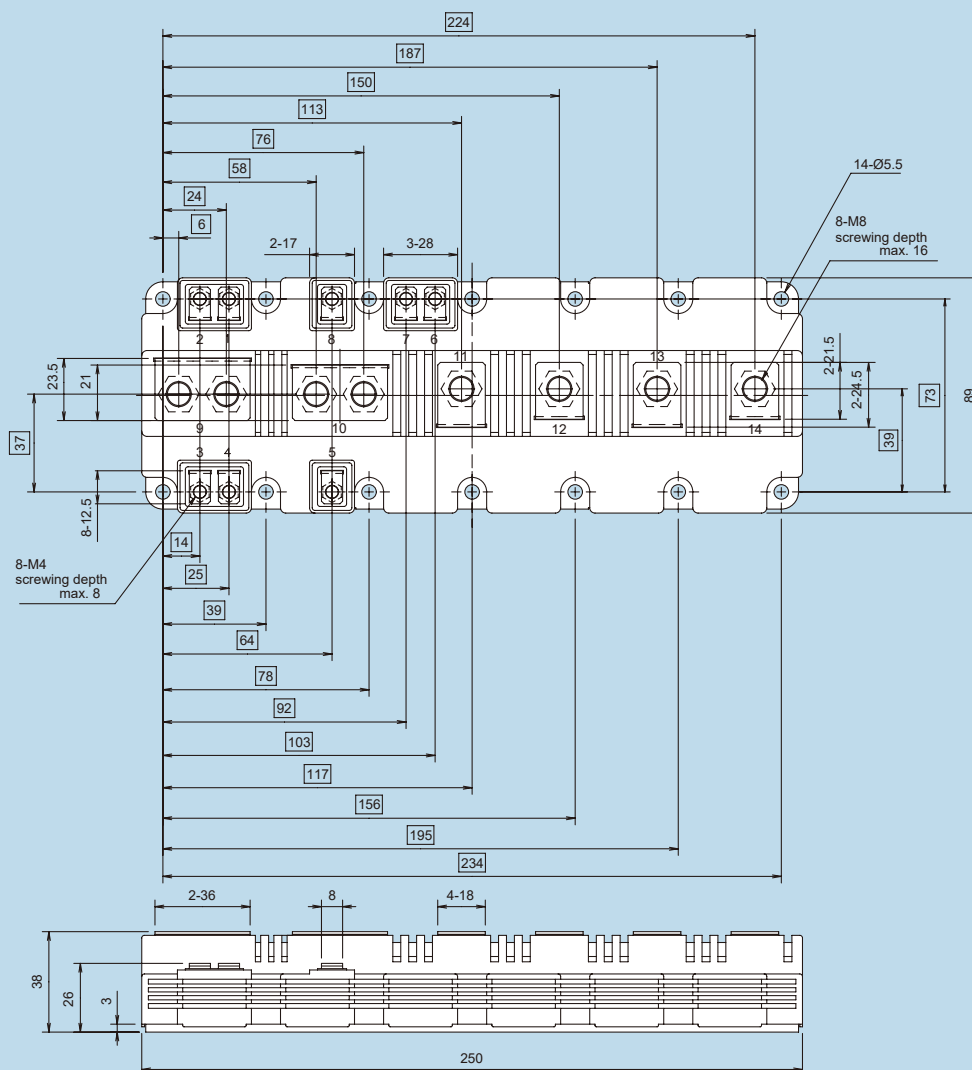
Power devices

Unit: mm

M289



M291



IGBT

SiC

IC

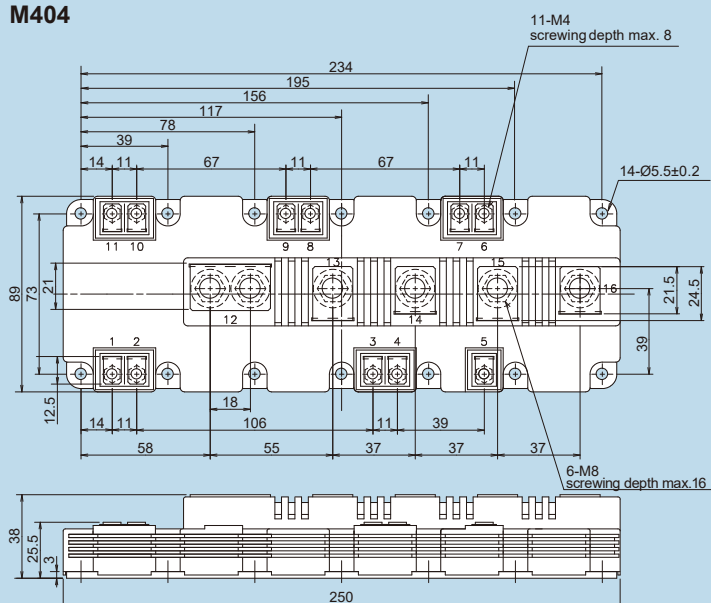
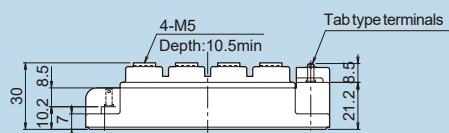
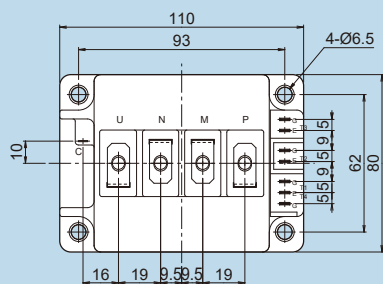
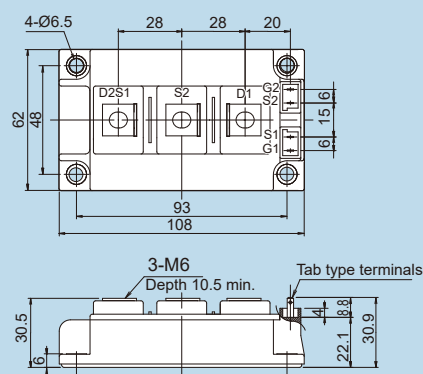
MOSFET

Diode

Pressure Sensor

Outline

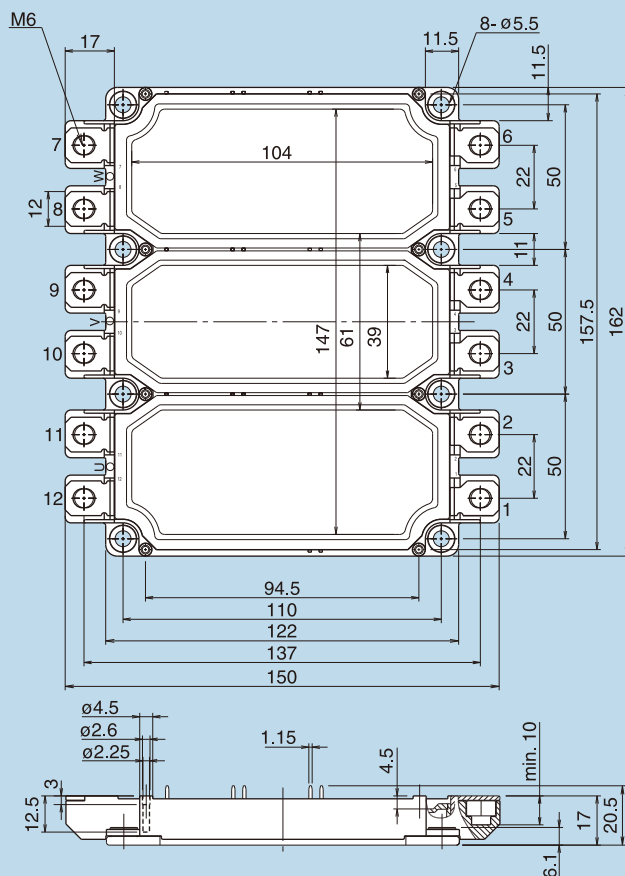
Index • Others



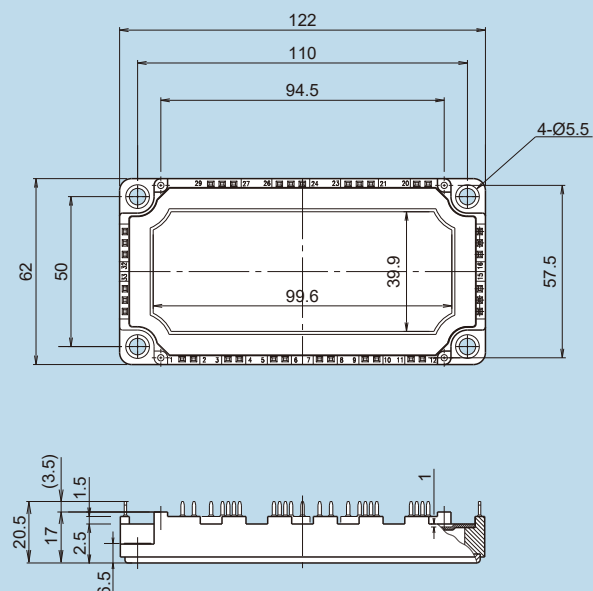
Power devices

Unit: mm

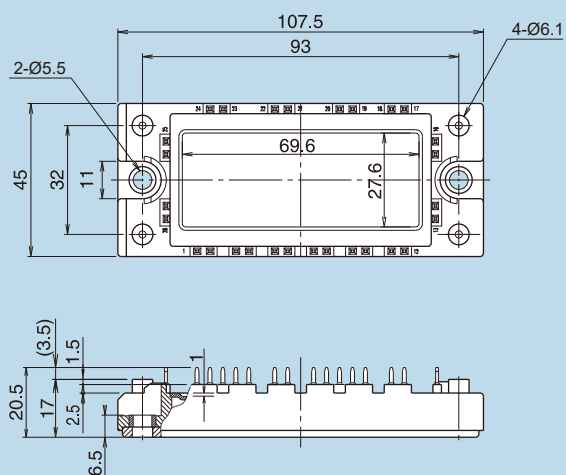
M629



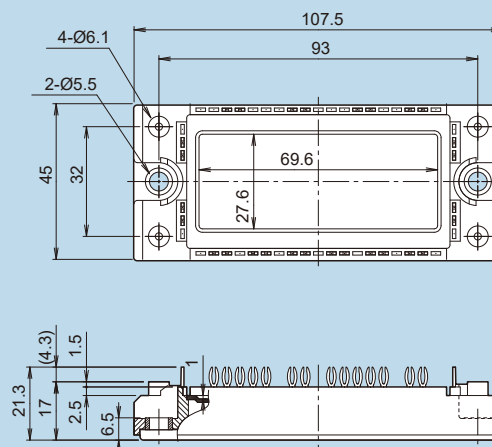
M633



M636



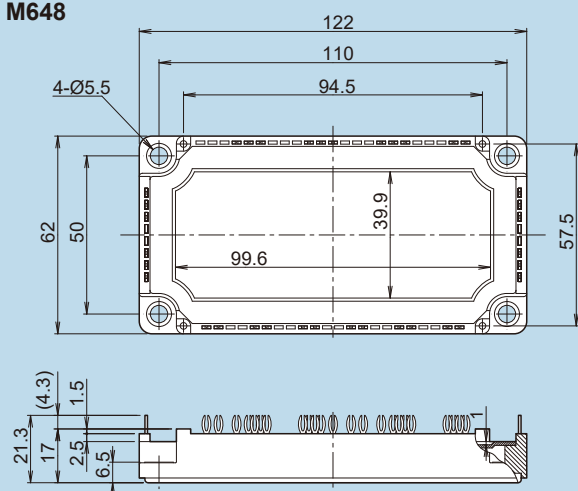
M647



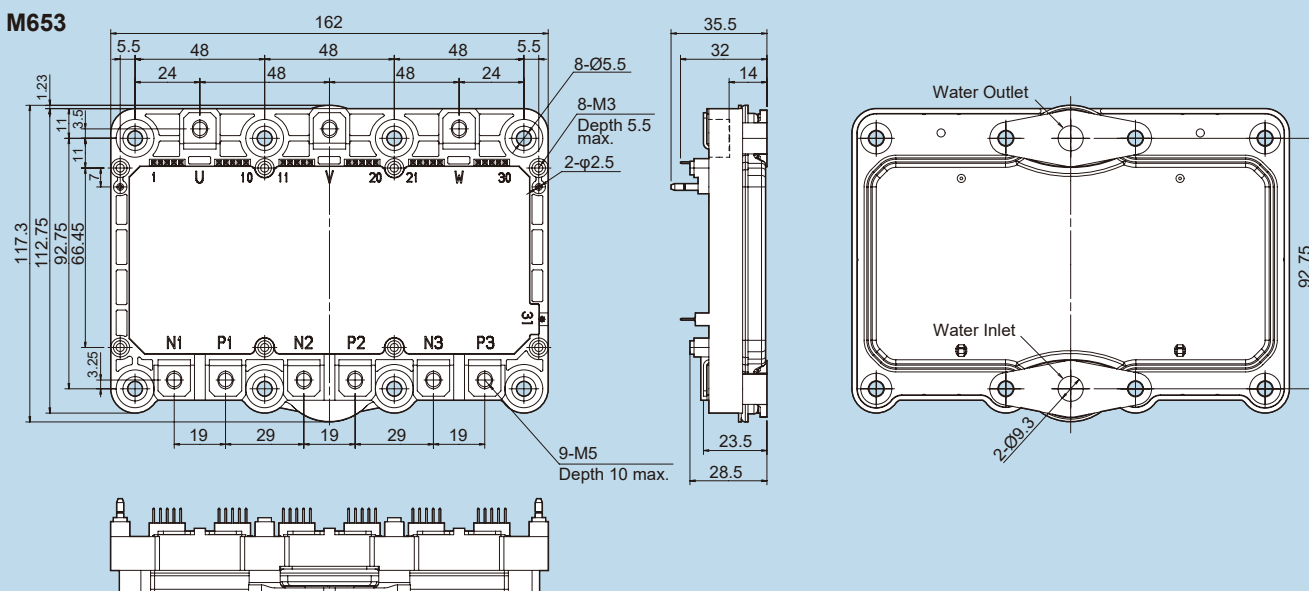
Power devices

Unit: mm

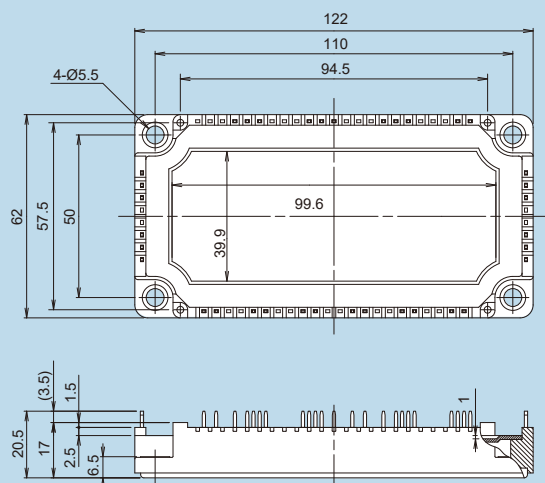
M648



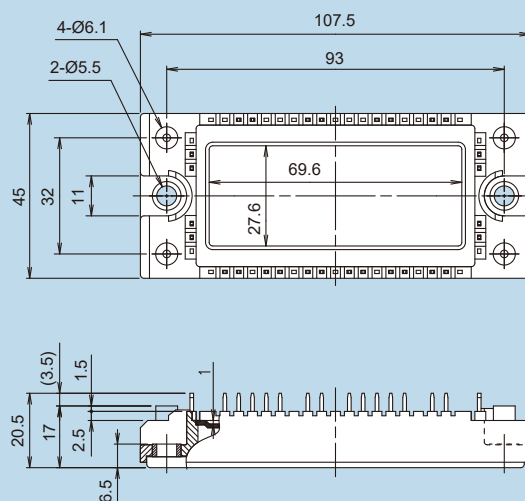
M653



M668



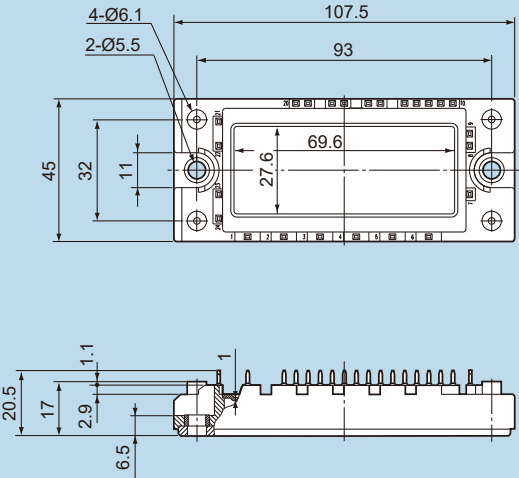
M669



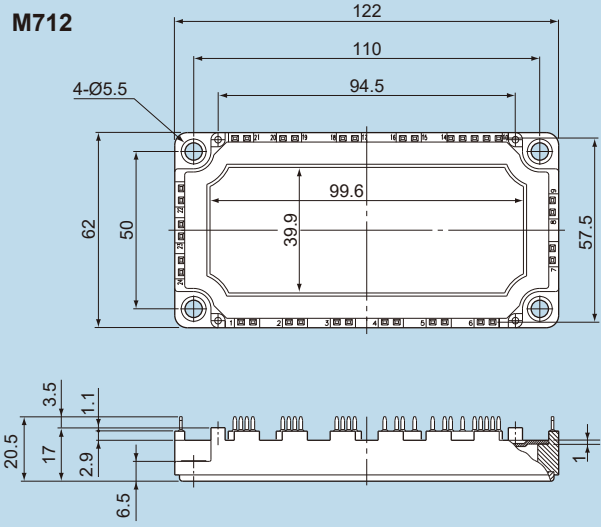
Power devices

Unit: mm

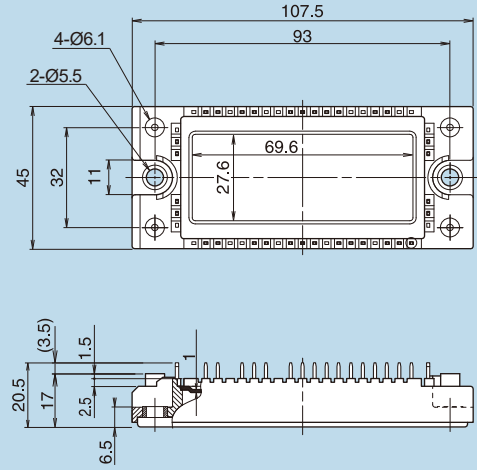
M711



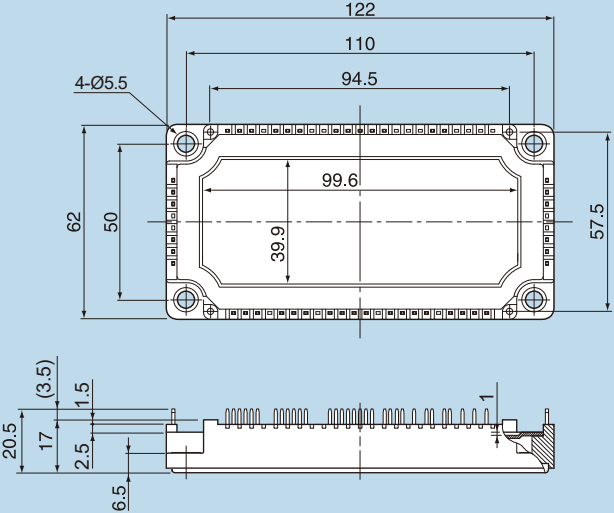
M712



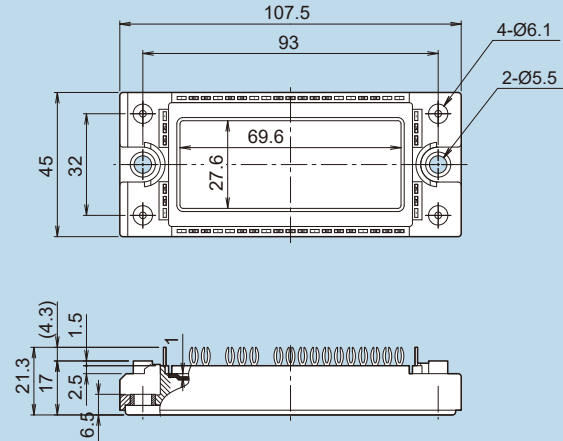
M719



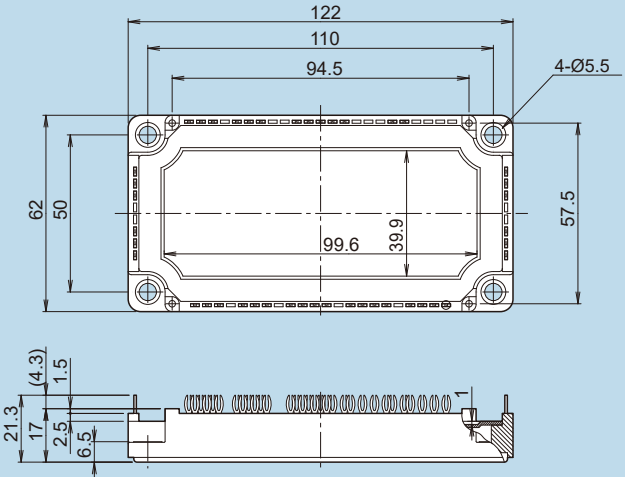
M720



M721



M722



IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

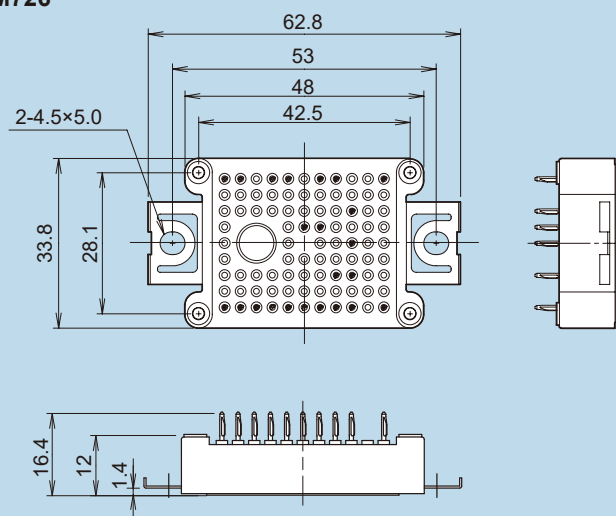
Outline

Index • Others

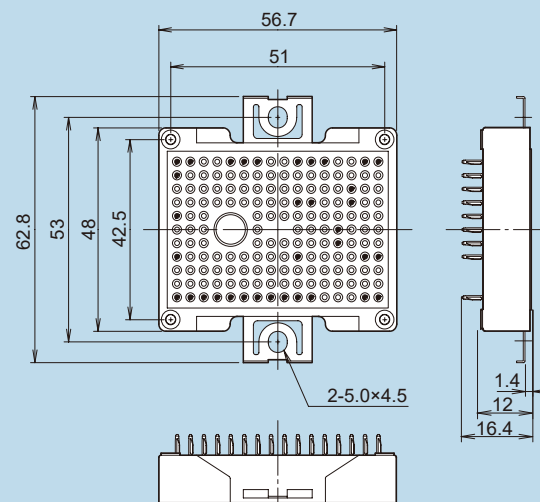
Power devices

Unit: mm

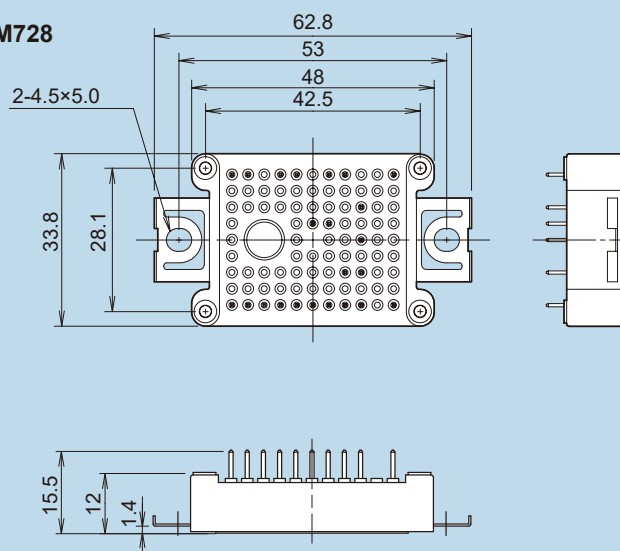
M726



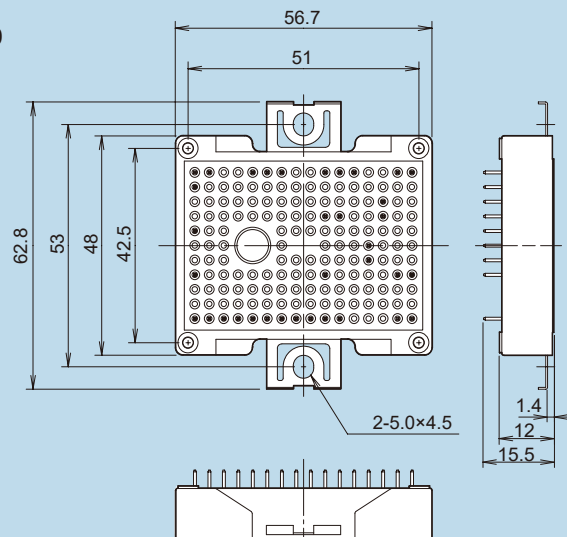
M727



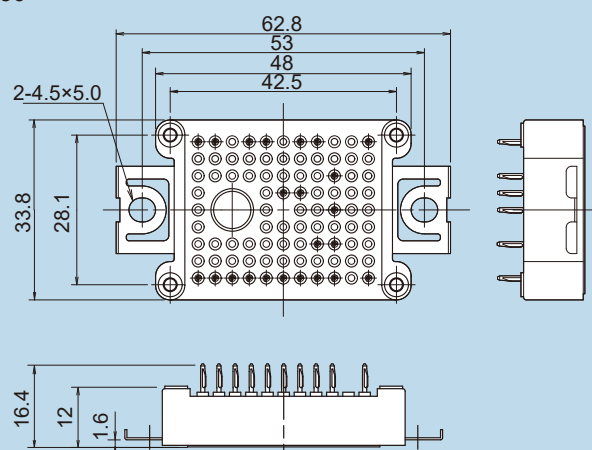
M728



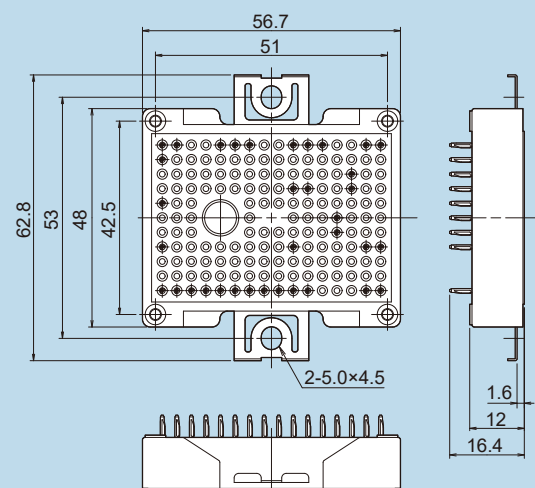
M729



M730



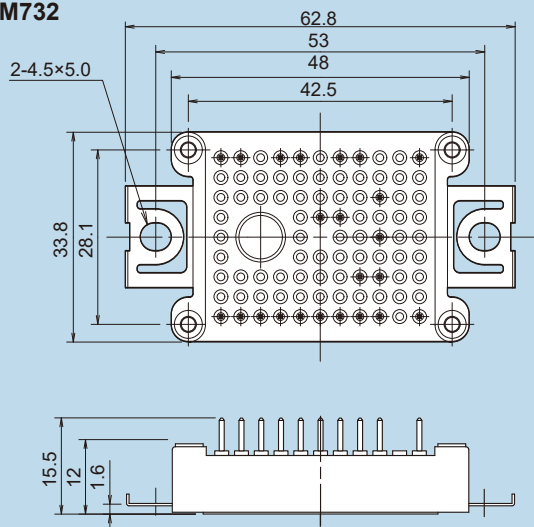
M731



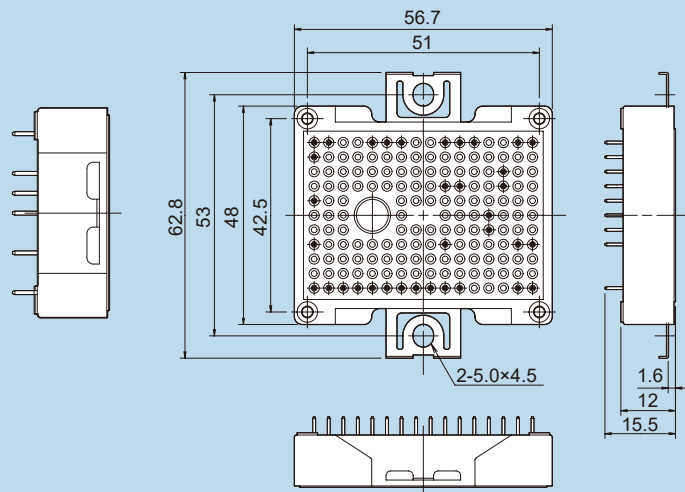
Power devices

Unit: mm

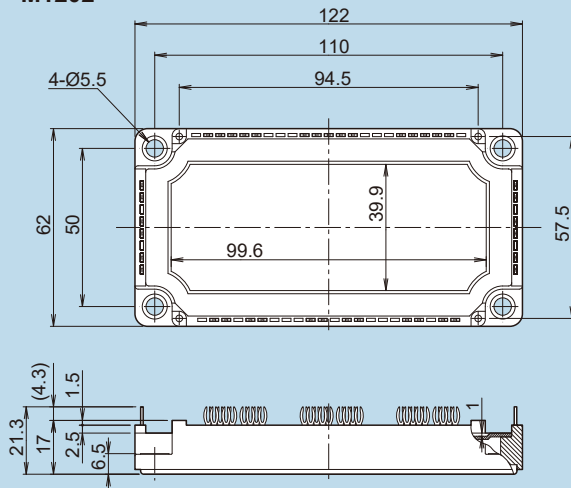
M732



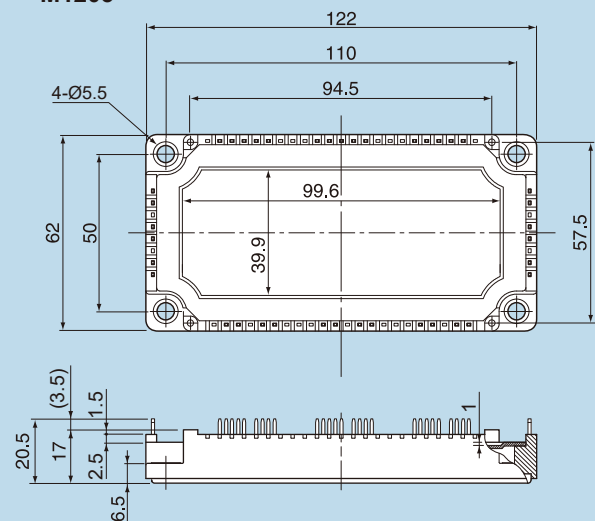
M733



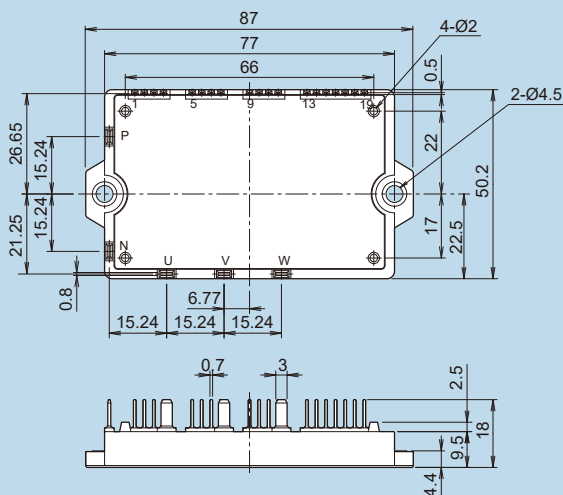
M1202



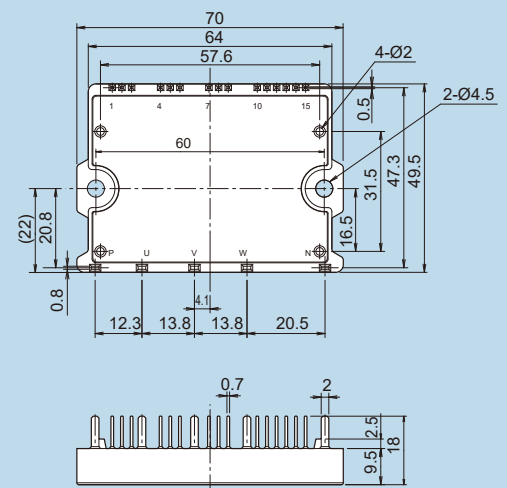
M1203



P626



P629



IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

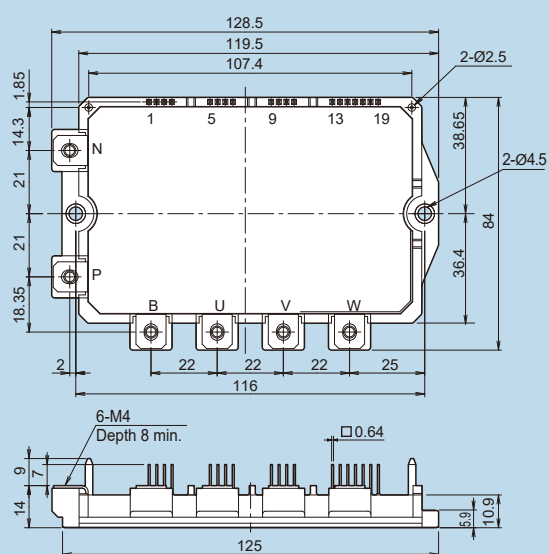
Outline

Index • Others

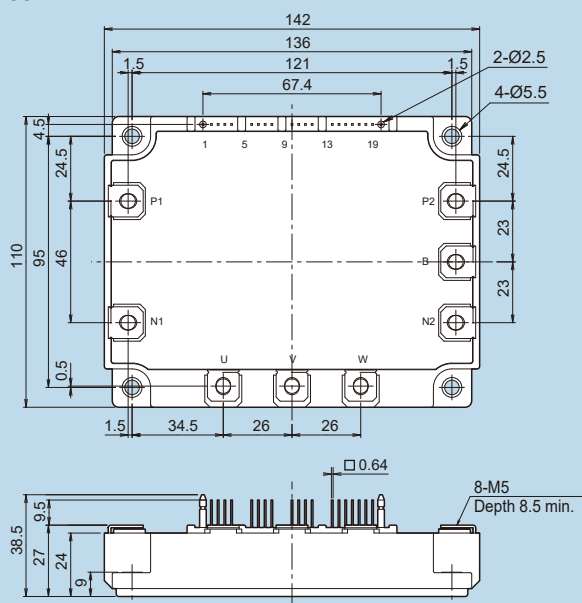
Power devices

Unit: mm

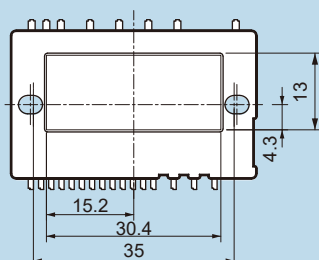
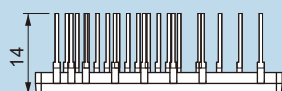
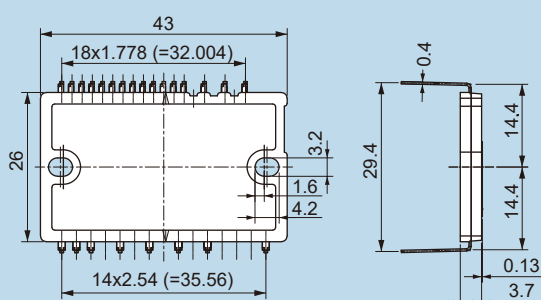
P630



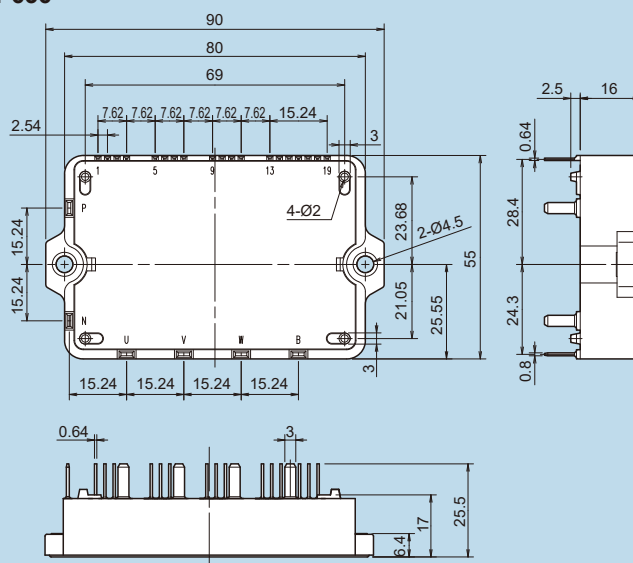
P631



P633A



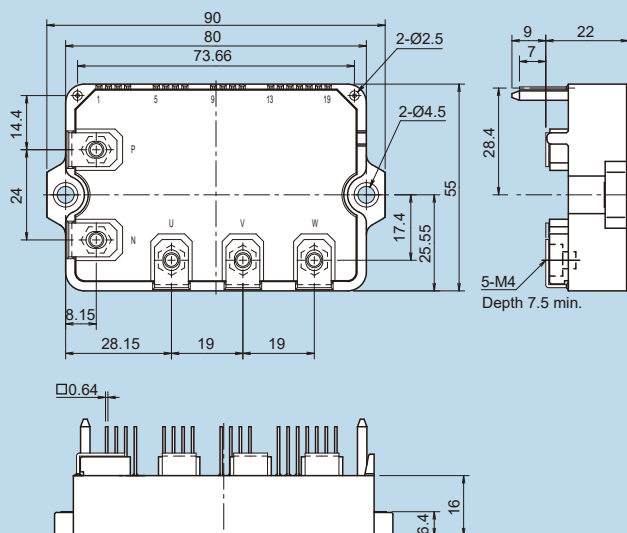
P636



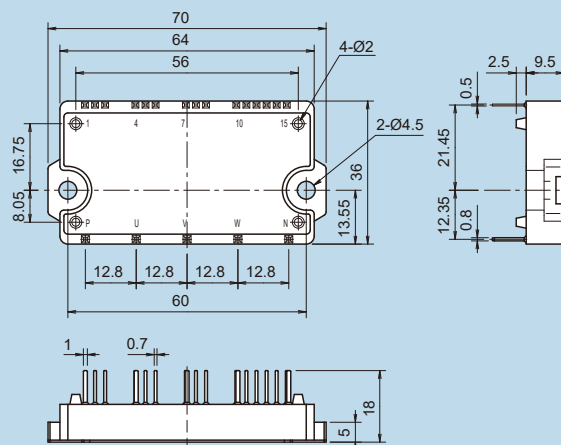
Power devices

Unit: mm

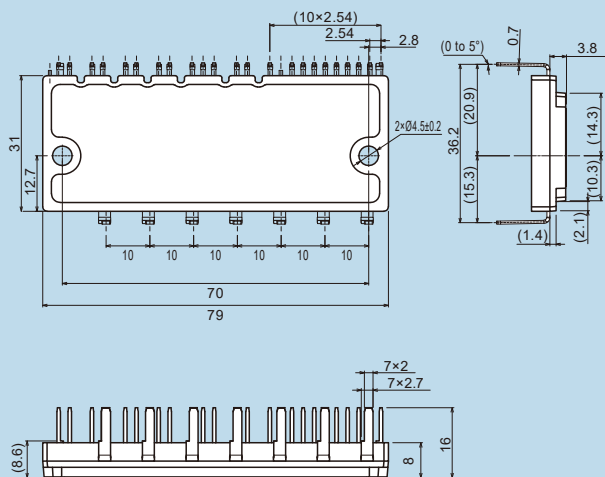
P638



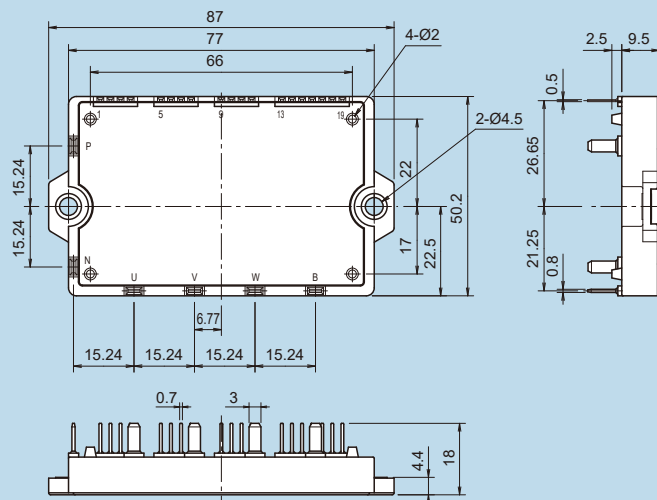
P639



P642



P644



IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

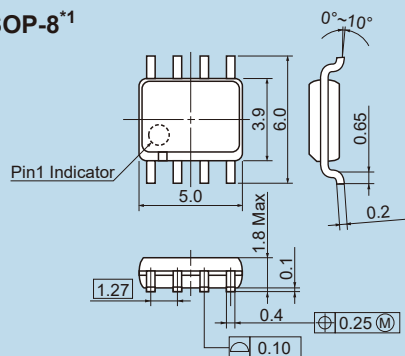
Outline

Index • Others

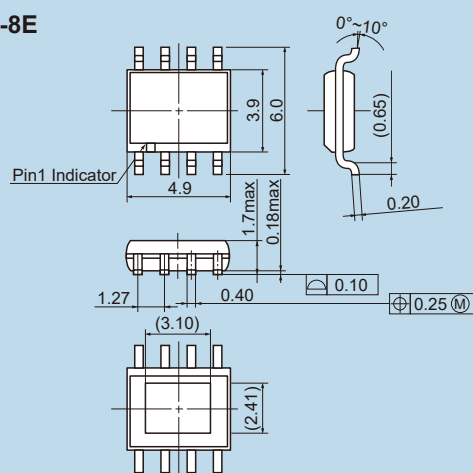
Power Supply Control IC

Unit: mm

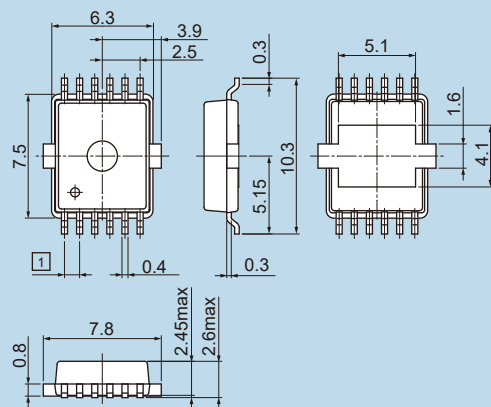
SOP-8*1



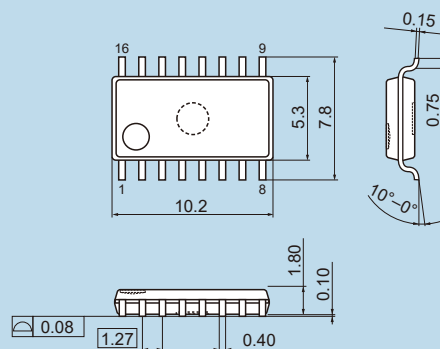
SOP-8E



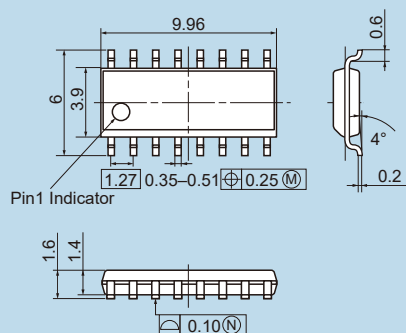
PSOP-12



SOP-16(M)



SOP-16(N)

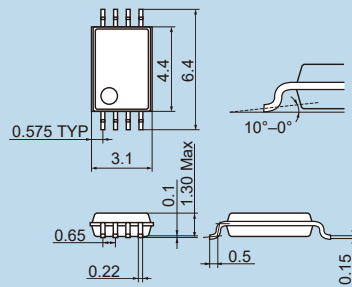


*1) This is the package size for the representative device type (FA8AxxN). For other ICs, please refer to the separate application note (specifications).

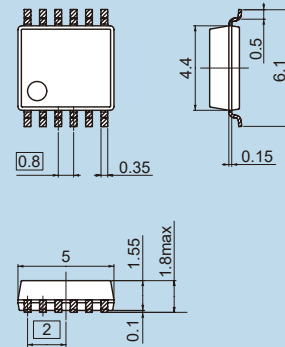
Power Supply Control IC

Unit: mm

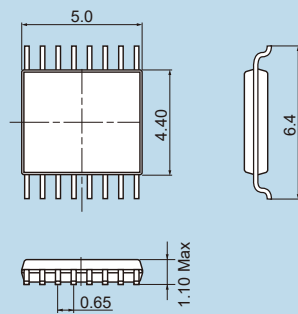
TSSOP-8



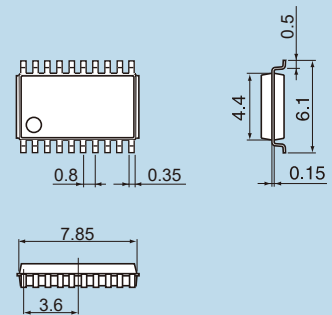
SSOP-12



TSSOP-16



SSOP-20



IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

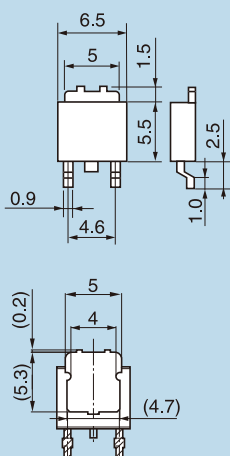
Outline

Index • Others

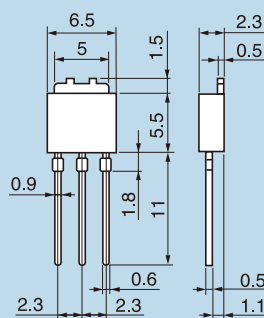
Discrete devices

Unit: mm

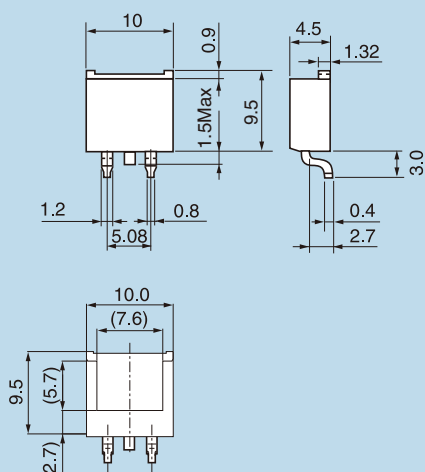
K-Pack(S)



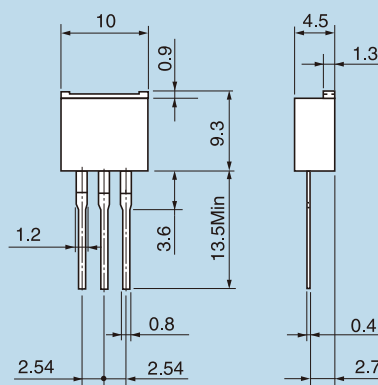
K-Pack(L)



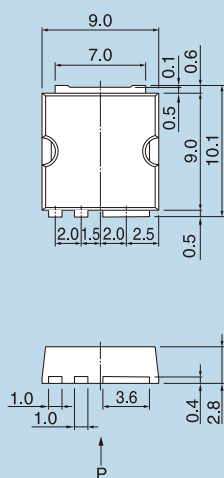
T-Pack(S)



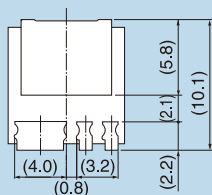
T-Pack(L)



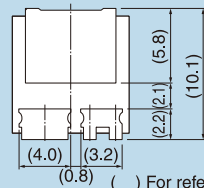
TFP



Power MOSFET



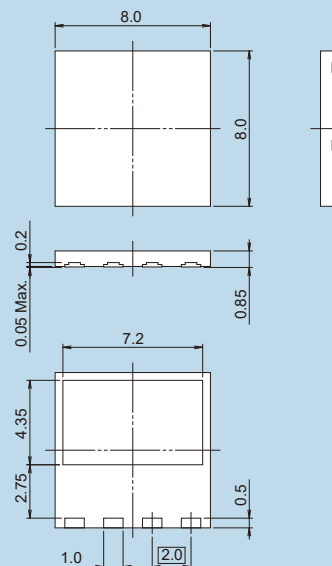
Diode



View from P

() For reference

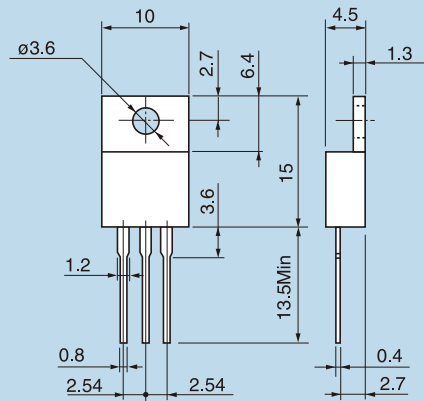
DFN8x8



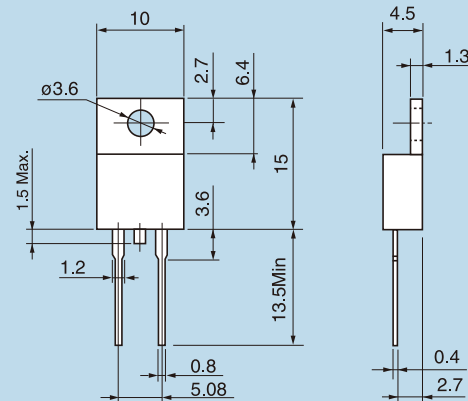
Discrete devices

Unit: mm

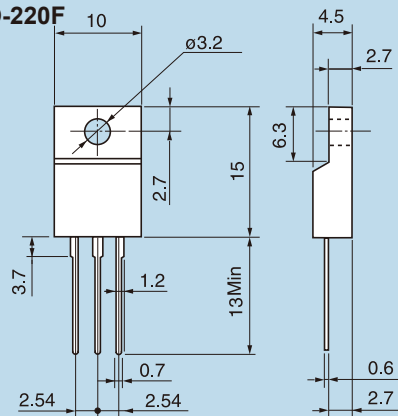
TO-220



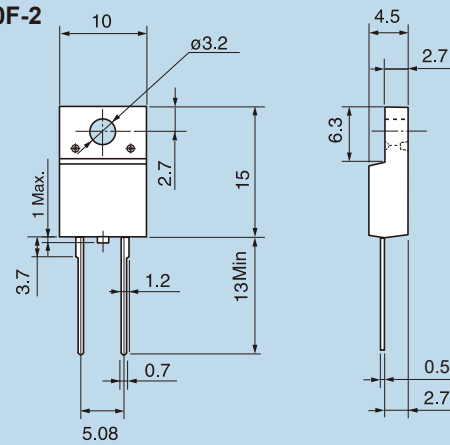
TO-220-2



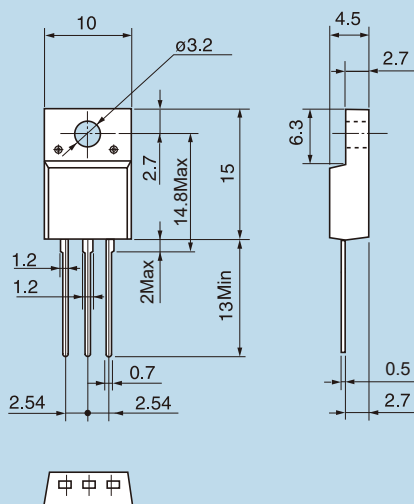
TO-220F



TO-220F-2



TO-220F (SLS)



IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

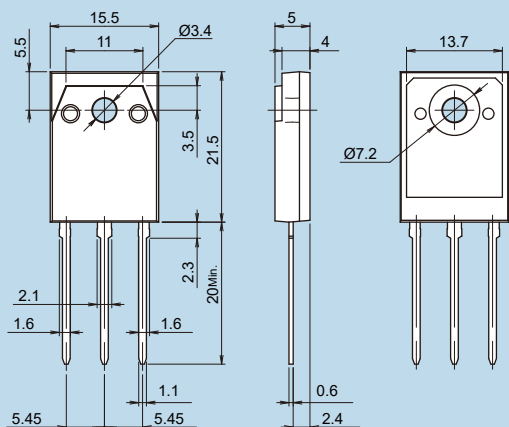
Outline

Index • Others

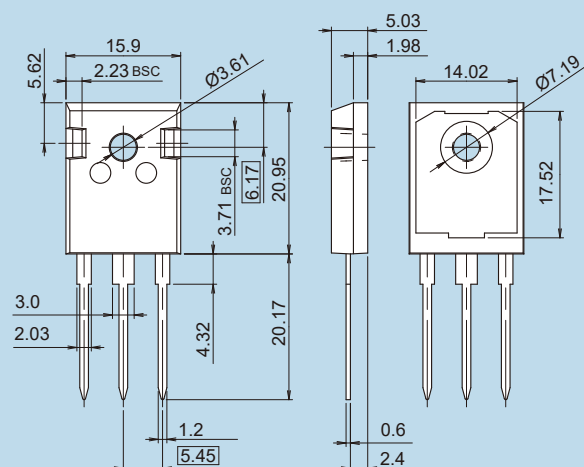
Discrete devices

Unit: mm

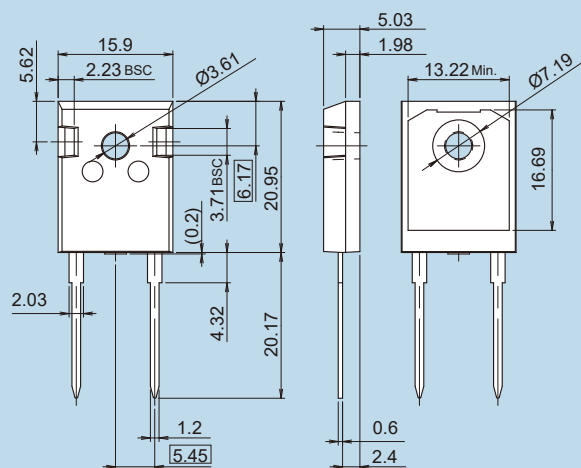
TO-247 (Type: A)



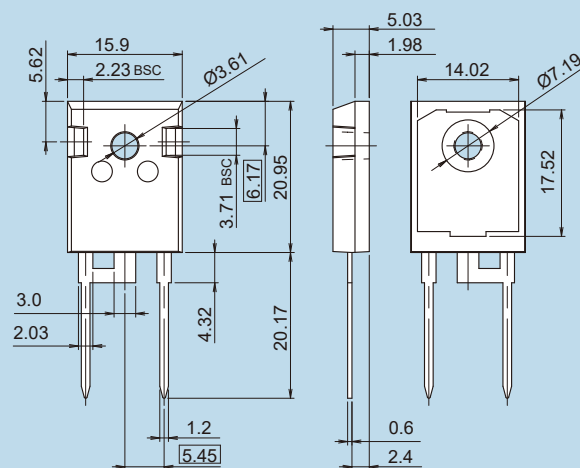
TO-247 (Type: B)



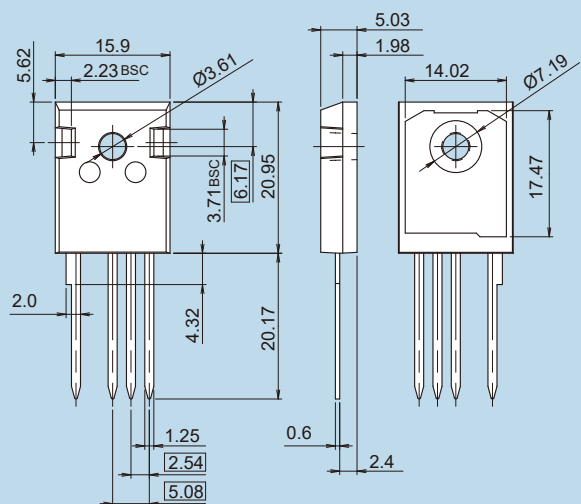
TO-247-2 (Type: A)



TO-247-2 (Type: B)



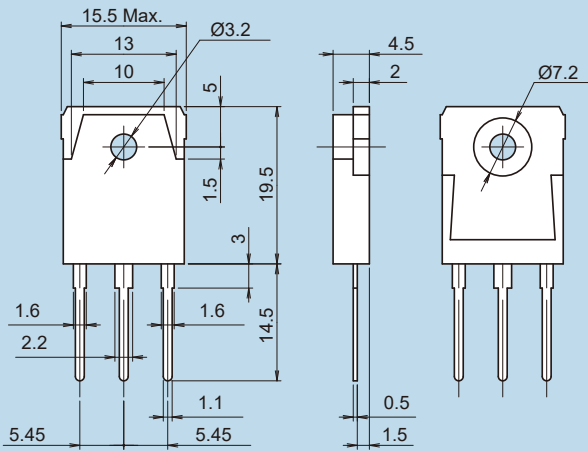
TO-247-4



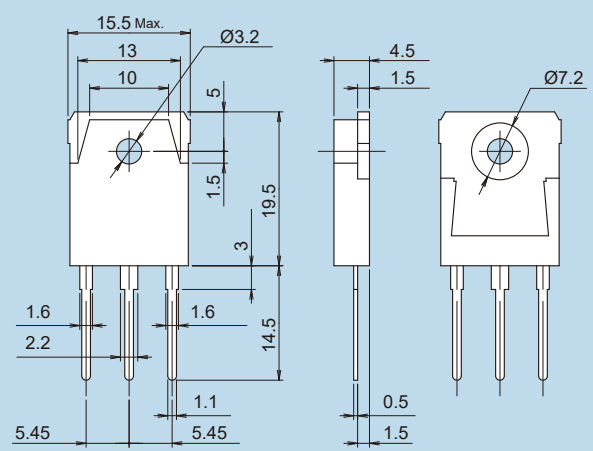
Discrete devices

Unit: mm

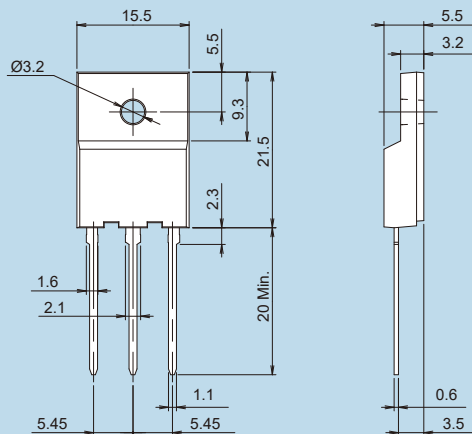
TO-3P



TO-3P(Q)



TO-3PF



IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

IGBT

SiC

IC

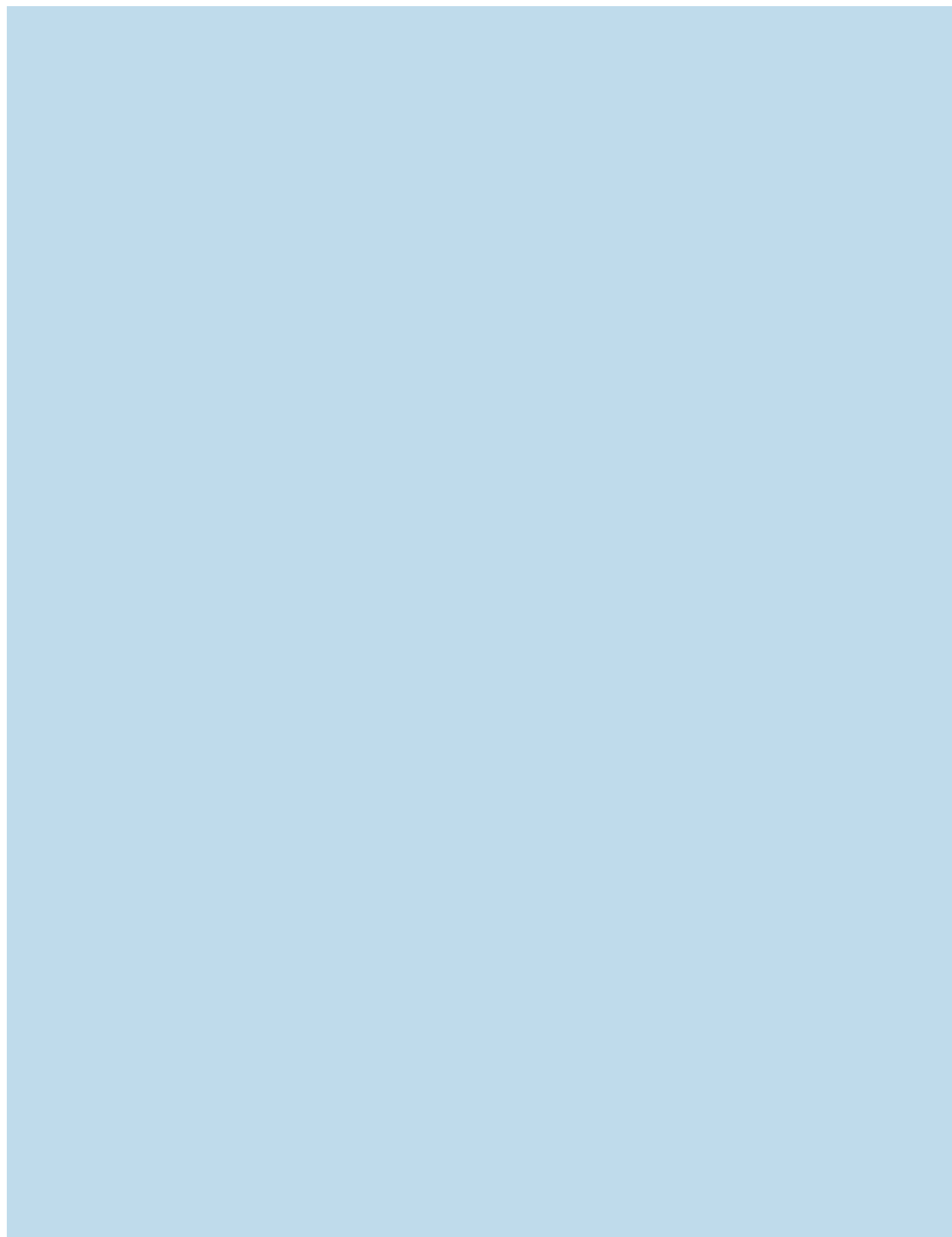
MOSFET

Diode

Pressure Sensor

Outline

Index • Others



Order Quantity	156
Type Number Index	157
Maintenance products	162
Discontinued products	163
Information	166

- Order unit is the number in “Min. quantity per order” or its integral multiplication.
- This table covers single or reel package items (Except for taping items).
- Order unit of taping package is different for each specification.
Please contact us for more detail.

Products	Package	Type number	Min. quantity per packing
Power MOSFETs Discrete IGBTs Diodes	TO-220, TO-220F, TO-220F(SLS)	All types (except for below types)	500
		-S2□PP (Tube)	1,000
	TO-220F-2	All types	1,000
	TO-247 (Type:A)		500
	TO-247 (Type:B)		600
	TO-247-2 (Type:A)		600
	TO-247-2 (Type:B)		600
	TO-247-4		600
	TO-3P, TO-3P(Q)	All types (except for below types)	500
		-S3□PP (Tube)	600
	TO-3PF	All types	500
	TO-3PL		50
Power Supply Control IC	TFP		1,500
	K-Pack(S)		3,000
	T-Pack(S)		1,000
	K-Pack(L)		500
	T-Pack(L)		500
	DFN8x8		3,000
		All types (except for below types)	2,000
		FA8A-□□, FA6A-□□, FA1A-□□	3,000
		FA5612, 13	3,000
		FA5627, 28	3,000
		FA5637	3,000
		FA5641, 42, 43, 44	3,000
		FA5680, FA5681	3,000
		FA5696	3,000
		FA5651	3,000
		FA5752	3,000
		FA13844	3,000

	Page		Page		Page		Page		Page		Page
12MBI100VN-120-50	46	1MBI400V-170-50	39	2MBI1200XVF170-50	35	2MBI225XNA120-50	31	2MBI450VH-120F-80	29	2MBI650VXA-170E-50	39
12MBI100VX-120-50	46	1MBI400VF-120-50	39	2MBI1200XXE120P-50	37	2MBI225XNA170-50	33	2MBI450VN-120-50	32	2MBI650VXA-170E-54	39
12MBI50VN-120-50	46	1MBI400VH-060L-50	41	2MBI1200XXE170-50	38	2MBI225XNB120-50	31	2MBI450VN-120-80	32	2MBI650VXA-170E-80	39
12MBI50VX-120-50	46	1MBI50U4F-120L-50	41	2MBI1400VXB-120E-50	37	2MBI225XNB170-50	33	2MBI450VN-120S-50	32	2MBI650VXA-170EA-50	39
12MBI75VN-120-50	46	1MBI600V-120-50	39	2MBI1400VXB-120E-54	37	2MBI2400XRXG120-50	37	2MBI450VN-120S-80	32	2MBI650VXA-170EA-54	39
12MBI75VX-120-50	46	1MBI600V-170-50	39	2MBI1400VXB-120E-80	37	2MBI300HJ-120-50	44	2MBI450VN-170-50	34	2MBI650VXA-170EA-80	39
1MBI1000UG-330	40	1MBI600VF-120-50	39	2MBI1400VXB-120P-50	37	2MBI300VB-060-50	27	2MBI450VN-170-80	34	2MBI650XXA170-50	38
1MBI1000UG-330B	40	1MBI650VXA-170EH-50	42	2MBI1400VXB-120P-54	37	2MBI300VD-120-50	29	2MBI450VX-120-50	32	2MBI75VA-120-50	29
1MBI1000VXB-170EH-50	42	1MBI650VXA-170EH-54	42	2MBI1400VXB-120P-80	37	2MBI300VE-120-50	29	2MBI450VX-120-80	32	2MBI75VA-170-50	30
1MBI1000VXB-170EH-54	42	1MBI650VXA-170EH-80	42	2MBI1400VXB-170E-50	39	2MBI300VE-120-80	29	2MBI450VX-170-50	34	2MBI75XAA170-50	30
1MBI1000VXB-170EH-80	42	1MBI650VXA-170EL-50	42	2MBI1400VXB-170E-54	39	2MBI300VE-170-50	30	2MBI450VX-170-80	34	2MBI800VG-120P	36
1MBI1000VXB-170EL-50	42	1MBI650VXA-170EL-54	42	2MBI1400VXB-170E-80	39	2MBI300VE-170-80	30	2MBI450XEE120-50	28	2MBI800VG-170E	36
1MBI1000VXB-170EL-54	42	1MBI650VXA-170EL-80	42	2MBI1400VXB-170P-50	39	2MBI300VH-120-50	29	2MBI450XHA120-50	28	2MBI800VT-170E	36
1MBI1000VXB-170EL-80	42	1MBI75U4F-120L-50	41	2MBI1400VXB-170P-54	39	2MBI300VH-120-80	29	2MBI450XNA120-50	31	2MBI800XNE120-50	31
1MBI100U4F-120L-50	41	1MBI800UG-330	40	2MBI1400VXB-170P-80	39	2MBI300VH-170-50	30	2MBI450XNA170-50	33	2MBI800XNF120-50	31
1MBI1200UE-330	40	1MBI900V-120-50	39	2MBI1400XXB120P-50	37	2MBI300VH-170-80	30	2MBI450XNB120-50	31	2MBI900VXA-120E-50	37
1MBI1200VC-120P	40	1MBI900VXA-120PC-50	43	2MBI1400XXB170-50	38	2MBI300VN-120-50	32	2MBI450XNB170-50	33	2MBI900VXA-120E-54	37
1MBI1200VC-170E	40	1MBI900VXA-120PC-54	43	2MBI150HH-120-50	44	2MBI300VN-120-80	32	2MBI450XVF330-50	35	2MBI900VXA-120E-80	37
1MBI1200VR-170E	40	1MBI900VXA-120PC-80	43	2MBI150HJ-120-50	44	2MBI300VN-120S-50	32	2MBI550VN-170-50	34	2MBI900VXA-120P-50	37
1MBI1400VXB-120PH-54	42	1MBI900VXA-120PD-50	43	2MBI150VA-060-50	27	2MBI300VN-120S-80	32	2MBI550VN-170-80	34	2MBI900VXA-120P-54	37
1MBI1400VXB-120PH-80	42	1MBI900VXA-120PD-54	43	2MBI150VA-120-50	29	2MBI300VN-170-50	34	2MBI550VX-170-50	34	2MBI900VXA-120P-80	37
1MBI1400VXB-120PL-54	42	1MBI900VXA-120PD-80	43	2MBI150VB-120-50	29	2MBI300VN-170-80	34	2MBI550VX-170-80	34	2MBI900XXA120P-50	37
1MBI1400VXB-120PL-80	42	1MSI1200XAGF330-03	70	2MBI150VH-170-50	30	2MBI300VX-120-50	32	2MBI600VD-060-50	27	2MSI200VAB-120-53	69
1MBI1400VXB-170PH-50	42	1MSI1800XAEF330-03	70	2MBI150VH-170-80	30	2MBI300VX-120-80	32	2MBI600VE-060-50	27	2MSI200VWAH-120-53	69
1MBI1400VXB-170PH-54	42	2CSI200DAHE170-50	72	2MBI150XAA065-50	27	2MBI300VX-170-50	34	2MBI600VE-060-80	27	2MSI300VAH-120C-53	69
1MBI1400VXB-170PL-50	42	2CSI300DAHE120-50	72	2MBI150XAA120-50	28	2MBI300VX-170-80	34	2MBI600VE-120-50	29	2MSI300VAN-120-53	69
1MBI1400VXB-170PL-54	42	2CSI300DAHE170-50	72	2MBI150XAA170-50	30	2MBI300XBE065-50	27	2MBI600VE-120-80	29	2MSI300VWAH-120-53	69
1MBI1500UE-330	40	2CSI400DAHE170-50	72	2MBI150XHA170-50	30	2MBI300XBE120-50	28	2MBI600VG-120P	36	2MSI300VWAN-120-53	69
1MBI1500UE-330B	40	2CSI450DAHE120-50	72	2MBI1800XXF120P-50	37	2MBI300XEE170-50	30	2MBI600VG-170E	36	2MSI400VAE-170-53	69
1MBI150VA-120L-50	41	2CSI600DAHE120-50	72	2MBI1800XXF170-50	38	2MBI300XHA120-50	28	2MBI600VN-120-50	32	2MSI450VAN-120-53	69
1MBI1600VC-120P	40	2MBI1000VXB-170E-50	39	2MBI1800XXG170-50	38	2MBI300XHA170-50	30	2MBI600VN-120-80	32	2MSI550VAN-170-53	69
1MBI1600VC-170E	40	2MBI1000VXB-170E-54	39	2MBI200HH-120-50	44	2MBI300XNA120-50	31	2MBI600VT-170E	36	2MSI600VAN-120-53	69
1MBI1600VR-170E	40	2MBI1000VXB-170E-80	39	2MBI200HJ-120-50	44	2MBI300XNA170-50	33	2MBI600VX-120-50	32	2SI900AGF330-03	71
1MBI200HH-120L-50	44	2MBI1000VXB-170EA-50	39	2MBI200VA-060-50	27	2MBI300XNB120-50	31	2MBI600VX-120-80	32	2SK3270-01	110
1MBI200U4H-120L-50	41	2MBI1000VXB-170EA-54	39	2MBI200VB-120-50	29	2MBI300XNB170-50	33	2MBI600VXA-120E-50	37	2SK3270-01	113
1MBI200VA-120L-50	41	2MBI1000VXB-170EA-80	39	2MBI200VH-120-50	29	2MBI400VB-060-50	27	2MBI600VXA-120E-54	37	2SK3271-01	110
1MBI2400VC-120P	40	2MBI1000XRNE120-50	31	2MBI200VH-120-80	29	2MBI400VD-060-50	27	2MBI600VXA-120E-80	37	2SK3271-01	113
1MBI2400VC-170E	40	2MBI1000XRNF120-50	31	2MBI200VH-170-50	30	2MBI400VD-120-50	29	2MBI600XDE065-50	27	2SK3272-01L, S	110
1MBI2400VD-120P	40	2MBI1000XVF170-50	35	2MBI200VH-170-80	30	2MBI400VE-170-50	30	2MBI600XDE120-50	28	2SK3272-01L, S	113
1MBI2400VD-170E	40	2MBI1000XXB170-50	38	2MBI200XAA065-50	27	2MBI400VE-170-80	30	2MBI600XEE065-50	27	2SK3273-01MR	110
1MBI2400VR-170E	40	2MBI100HB-120-50	44	2MBI200XAA120-50	28	2MBI400XBE065-50	27	2MBI600XEE120-50	28	2SK3273-01MR	113
1MBI2400VS-170E	40	2MBI100HJ-120-50	44	2MBI200XBE120-50	28	2MBI400XDE065-50	27	2MBI600XHA120-50	28	2SK3450-01	108
1MBI300HH-120L-50	44	2MBI100VA-060-50	27	2MBI200XHA170-50	30	2MBI400XDE120-50	28	2MBI600XNE120-50	31	2SK3451-01MR	108
1MBI300U2H-060L-50	41	2MBI100VA-120-50	29	2MBI225VN-120-50	32	2MBI400XEE170-50	30	2MBI600XNE170-50	33	2SK3468-01	107
1MBI300V-170-50	39	2MBI100VA-170-50	30	2MBI225VN-120-80	32	2MBI400XHA170-50	30	2MBI600XNF120-50	31	2SK3469-01MR	107
1MBI3600VD-120P	40	2MBI100XAA120-50	28	2MBI225VN-120S-50	32	2MBI450VE-120-50	29	2MBI600XNF170-50	33	2SK3474-01	106
1MBI3600VD-170E	40	2MBI100XAA170-50	30	2MBI225VX-120-50	32	2MBI450VE-120-80	29	2MBI600XNG120-50	31	2SK3501-01	108
1MBI3600VS-170E	40	2MBI1200VG-120P	36	2MBI225VX-120-80	32	2MBI450VH-120-50	29	2MBI600XNG170-50	33	2SK3502-01MR	108
1MBI400HH-120L-50	44	2MBI1200VG-170E	36	2MBI225VX-170-50	34	2MBI450VH-120-80	29	2MBI600XNH120-50	31	2SK3504-01	107
1MBI400V-120-50	39	2MBI1200VT-170E	36	2MBI225VX-170-80	34	2MBI450VH-120F-50	29	2MBI600XNH170-50	33	2SK3505-01MR	107

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

Type Number Index

	Page		Page		Page		Page		Page		Page
2SK3512-01L, S	107	2SK3682-01	107	2SK3983-01L, S	108	6MBI150VX-120-80	24	6MBP150XDA065-50	57	6MBP50VFN060-50	54
2SK3513-01L, S	108	2SK3683-01MR	107	2SK3985-01	107	6MBI150XBA120-50	24	6MBP150XDN065-50	57	6MBP50VFN120-50	54
2SK3514-01	107	2SK3684-01L, S	107	2SK3986-01MR	107	6MBI150XXA120-50	24	6MBP150XDN120-50	57	6MBP50XAA065-50	49
2SK3515-01MR	107	2SK3685-01	107	2SK3987-01L, S	107	6MBI180VB-120-50	24	6MBP150XEN120-50	61	6MBP50XBA065-50	51
2SK3516-01L, S	107	2SK3686-01	108	2SK3988-01	108	6MBI180VB-120-55	24	6MBP150XGN065-50	54	6MBP50XBA120-50	51
2SK3519-01	107	2SK3687-01MR	108	2SK3989-01MR	108	6MBI180VX-120-50	24	6MBP15VAA120-50	49	6MBP50XDA120-50	57
2SK3520-01MR	107	2SK3688-01L, S	108	2SK3990-01L, S	108	6MBI180VX-120-55	24	6MBP15XSD060-50	47	6MBP50XFN120-50	54
2SK3521-01L, S	107	2SK3689-01	108	2SK4004-01MR	107	6MBI180VX-120-80	24	6MBP15XSF060-50	47	6MBP50XGA065-50	54
2SK3522-01	107	2SK3692-01	107	2SK4040-01	107	6MBI180VX-120-85	24	6MBP200VDA060-50	58	6MBP50XGN120-50	54
2SK3523-01R	107	2SK3693-01MR	107	2SK4047-01S	110	6MBI200XBA120-50	24	6MBP200VDN060-50	58	6MBP50XTA065-50	47
2SK3524-01	108	2SK3694-01L, S	107	2SK4047-01S	113	6MBI200XBE120-50	24	6MBP200VEA060-50	61	6MBP50XTC065-50	47
2SK3525-01MR	108	2SK3695-01	109	2SK4068-01	110	6MBI200XXA120-50	24	6MBP200VEA120-50	61	6MBP75VBA060-50	51
2SK3526-01L, S	108	2SK3696-01MR	109	2SK4068-01	113	6MBI200XXE120-50	24	6MBP200XDN065-50	57	6MBP75VDA060-50	58
2SK3527-01	108	2SK3697-01	109	4MBI220VF-170R2-50	46	6MBI225V-120-50	26	6MBP200XEN065-50	61	6MBP75VDA120-50	58
2SK3528-01R	108	2SK3698-01	108	4MBI300VG-120R1-50	46	6MBI250XRBE120-50	24	6MBP200XEN120-50	61	6MBP75VDN120-50	58
2SK3535-01	106	2SK3699-01MR	108	4MBI300VG-120R-50	46	6MBI250XRXE120-50	24	6MBP20VAA060-50	49	6MBP75VFN060-50	54
2SK3537-01MR	106	2SK3725-01	107	4MBI340VF-120R-50	46	6MBI300V-120-50	26	6MBP20XRHA065-50	49	6MBP75XAA065-50	49
2SK3554-01	106	2SK3726-01MR	107	4MBI400VF-120R-50	46	6MBI300V-120-80	26	6MBP20XSD060-50	47	6MBP75XBA065-50	51
2SK3555-01MR	106	2SK3727-01	108	4MBI400VG-060R-50	46	6MBI300V-170-50	26	6MBP20XSF060-50	47	6MBP75XDA120-50	57
2SK3556-01L, S	106	2SK3728-01MR	108	4MBI450VB-120R1-50	45	6MBI450V-120-50	26	6MBP250XDN065-50	57	6MBP75XDN120-50	57
2SK3580-01MR	107	2SK3730-01MR	110	4MBI450VB-120R1-60	45	6MBI450V-170-50	26	6MBP25VAA120-50	49	6MBP75XGA065-50	54
2SK3581-01L, S	107	2SK3730-01MR	113	4MBI450VB-170R2-50	45	6MBI450V-170-80	26	6MBP25VBA120-50	51	6MBP75XGN120-50	54
2SK3590-01	106	2SK3753-01R	108	4MBI450VB-170R2-60	45	6MBI50VA-060-50	24	6MBP25VDA120-50	58	6MBP75XTA065-50	47
2SK3591-01MR	106	2SK3772-01	107	4MBI600VB-170R2-50	45	6MBI50VA-120-50	24	6MBP25VFN120-50	54	6MBP75XTC065-50	47
2SK3592-01L, S	106	2SK3773-01MR	107	4MBI600VB-170R2-60	45	6MBI50VW-060-50	24	6MBP25XAA120-50	49	7MBP100VDA060-50	58
2SK3593-01	106	2SK3774-01L, S	107	4MBI600VC-120-50	45	6MBI50VW-120-50	24	6MBP25XBA120-50	51	7MBP100VDA120-50	58
2SK3594-01	106	2SK3775-01	107	4MBI600VC-120-60	45	6MBI550V-120-50	26	6MBP25XGA120-50	54	7MBP100VDN060-50	58
2SK3595-01MR	106	2SK3778-01	106	4MBI650VB-120R1-50	45	6MBI75VA-060-50	24	6MBP300VEA060-50	61	7MBP100VDN120-50	58
2SK3596-01L, S	106	2SK3779-01R	106	4MBI650VB-120R1-60	45	6MBI75VA-120-50	24	6MBP300XEN065-50	61	7MBP100VEA120-50	61
2SK3597-01	106	2SK3804-01S	110	4MBI900VB-120R1-50	45	6MBI75VW-060-50	24	6MBP300XEN120-50	61	7MBP100VFN060-50	54
2SK3598-01	106	2SK3804-01S	113	4MBI900VB-120R1-60	45	6MBI75VW-120-50	24	6MBP30VAA060-50	49	7MBP100XDA065-50	57
2SK3599-01MR	106	2SK3882-01	106	4MBI900VB-120RA-50	45	6MBI800XV-075V-01	66	6MBP30XRHA065-50	49	7MBP100XDA120-50	57
2SK3600-01L, S	106	2SK3886-01MR	106	4MBI900VB-120RA-60	45	6MBP100VDA060-50	58	6MBP30XSD060-50	47	7MBP100XDN120-50	57
2SK3602-01	106	2SK3887-01	108	6MBI100VA-060-50	24	6MBP100VDA120-50	58	6MBP30XSF060-50	47	7MBP100XEN120-50	61
2SK3603-01MR	106	2SK3888-01MR	108	6MBI100VA-120-50	24	6MBP100VDN060-50	58	6MBP35VBA120-50	51	7MBP100XFN065-50	54
2SK3604-01L, S	106	2SK3889-01L, S	108	6MBI100VB-120-50	24	6MBP100VDN120-50	58	6MBP35VDA120-50	58	7MBP150VDA060-50	58
2SK3606-01	106	2SK3891-01R	108	6MBI100VW-060-50	24	6MBP100VEA120-50	61	6MBP35VFN120-50	54	7MBP150VDN060-50	58
2SK3607-01MR	106	2SK3916-01	107	6MBI100VW-120-50	24	6MBP100VFN060-50	54	6MBP35XAA120-50	49	7MBP150VEA120-50	61
2SK3608-01L, S	106	2SK3917-01MR	107	6MBI100VX-120-50	24	6MBP100XBA065-50	51	6MBP35XBA120-50	51	7MBP150XDA065-50	57
2SK3609-01	106	2SK3920-01	106	6MBI100VX-120-80	24	6MBP100XDA065-50	57	6MBP35XGA120-50	54	7MBP150XDN065-50	57
2SK3610-01	106	2SK3921-01L, S	106	6MBI100VX-170-50	25	6MBP100XDA120-50	57	6MBP35XSD060-50	47	7MBP150XDN120-50	57
2SK3611-01MR	106	2SK3922-01	106	6MBI100VX-170-80	25	6MBP100XDN120-50	57	6MBP35XSF060-50	47	7MBP150XEN120-50	61
2SK3612-01L, S	106	2SK3928-01	109	6MBI100XAE120-50	24	6MBP100XEN120-50	61	6MBP400VEA060-50	61	7MBP200VDA060-50	58
2SK3648-01	106	2SK3929-01MR	109	6MBI100XBA120-50	24	6MBP100XFN065-50	54	6MBP450XEN065-50	61	7MBP200VDN060-50	58
2SK3649-01MR	106	2SK3930-01L, S	109	6MBI100XXA120-50	24	6MBP100XGN065-50	54	6MBP50VAA060-50	49	7MBP200VEA060-50	61
2SK3650-01L, S	106	2SK3931-01	107	6MBI150VB-060-50	24	6MBP10VAA120-50	49	6MBP50VBA060-50	51	7MBP200VEA120-50	61
2SK3651-01R	106	2SK3932-01MR	107	6MBI150VB-120-50	24	6MBP10XRHA120-50	49	6MBP50VBA120-50	51	7MBP200XDN065-50	57
2SK3676-01L, S	108	2SK3933-01L, S	107	6MBI150VX-060-50	24	6MBP150VDA060-50	58	6MBP50VDA060-50	58	7MBP200XEN065-50	61
2SK3680-01	107	2SK3981-01	108	6MBI150VX-060-80	24	6MBP150VDN060-50	58	6MBP50VDA120-50	58	7MBP200XEN120-50	61
2SK3681-01	108	2SK3982-01MR	108	6MBI150VX-120-50	24	6MBP150VEA120-50	61	6MBP50VDN120-50	58	7MBP250XDN065-50	57

	Page		Page		Page		Page		Page		Page
7MBP25VDA120-50	58	7MBR10VKA120-50	16	7MBR25XKC120-50	15	7MBR75VB120-50	19	FA13843N	82	FA6A10N	88
7MBP25VFN120-50	54	7MBR10VKC060-50	14	7MBR25XKD120-50	15	7MBR75VN120-50	19	FA13844N	82	FA6A11N	88
7MBP25XJA120-50	51	7MBR10VKC120-50	16	7MBR30VKA060-50	14	7MBR75VP060-50	17	FA13845N	82	FA6A30N	88
7MBP300VEA060-50	61	7MBR10XKA065-50	14	7MBR30VKC060-50	14	7MBR75VR120-50	19	FA1A00N	86	FA6A31N	88
7MBP300XEN065-50	61	7MBR10XKA120-50	15	7MBR30XKA065-50	14	7MBR75VX120-50	22	FA1A01N	86	FA6B19N	88
7MBP300XEN120-50	61	7MBR10XKC065-50	14	7MBR30XKC065-50	14	7MBR75VX120-80	22	FA1A10N	86	FA6B20N	88
7MBP35VDA120-50	58	7MBR10XKC120-50	15	7MBR35VA120-50	19	7MBR75VY060-50	20	FA1A11N	86	FA6B21N	88
7MBP35VFN120-50	54	7MBR150VN120-50	19	7MBR35VB120-50	19	7MBR75VZ120-50	22	FA1A21N	86	FA6B22N	88
7MBP35XJA120-50	51	7MBR150VR060-50	17	7MBR35VKB120-50	16	7MBR75VZ120-80	22	FA1A50N	86	FA7700V	90
7MBP400VEA060-50	61	7MBR150VR120-50	19	7MBR35VKD120-50	16	7MBR75XMA065-50	17	FA1A60N	86	FA7701V	90
7MBP450XEN065-50	61	7MBR150VX120-50	22	7MBR35VM120-50	19	7MBR75XME120-50	18	FA1A61N	86	FA7703V	90
7MBP50VDA060-50	58	7MBR150VX120-80	22	7MBR35VP120-50	19	7MBR75XNA065-50	17	FA3641N	82	FA7764N	90
7MBP50VDA120-50	58	7MBR150VZ060-50	20	7MBR35VW120-50	22	7MBR75XNA120-50	18	FA3647N	82	FA8A00N	80
7MBP50VDN120-50	58	7MBR150VZ060-80	20	7MBR35VY120-50	22	7MBR75XPA065-50	17	FA3687V	90	FA8A01N	80
7MBP50VFN060-50	54	7MBR150VZ120-50	22	7MBR35XKB120-50	15	7MBR75XPE120-50	18	FA5502M	86	FA8A12N	80
7MBP50VFN120-50	54	7MBR150VZ120-80	22	7MBR35XKD120-50	15	7MBR75XRA120-50	18	FA5504N	82	FA8A27N	80
7MBP50XDA120-50	57	7MBR150XNA065-50	17	7MBR35XMA120-50	18	7MBR75XRE120-50	18	FA5510N	82	FA8A37N	80
7MBP50XFN120-50	54	7MBR150XNE120-50	18	7MBR35XPA120-50	18	7MBR75XWA065-50	20	FA5511N	82	FA8A39N	80
7MBP50XJA065-50	51	7MBR150XRA065-50	17	7MBR35XWA120-50	21	7MBR75XWE120-50	21	FA5514N	82	FA8A40N	80
7MBP75VDA060-50	58	7MBR150XRE065-50	17	7MBR35XYA120-50	21	7MBR75XXA065-50	20	FA5515N	82	FA8A41N	80
7MBP75VDA120-50	58	7MBR150XRE120-50	18	7MBR50VA060-50	17	7MBR75XXA120-50	21	FA5570N	84	FA8A60N	80
7MBP75VDN120-50	58	7MBR150XXA065-50	20	7MBR50VB120-50	19	7MBR75XYA065-50	20	FA5571N	84	FA8A61N	80
7MBP75VFN060-50	54	7MBR150XXE120-50	21	7MBR50VKB060-50	14	7MBR75XYE120-50	21	FA5572N	84	FA8A64N	80
7MBP75XDA120-50	57	7MBR150XZA065-50	20	7MBR50VKD060-50	14	7MBR75XZA120-50	21	FA5573N	84	FA8A65N	80
7MBP75XDN120-50	57	7MBR150XZE120-50	21	7MBR50VM120-50	19	EPL4PC-R3S	132	FA5574N	84	FA8A70N	80
7MBP75XJA065-50	51	7MBR15VKA060-50	14	7MBR50VN120-50	19	EPL6GC-R3S	132	FA5577N	84	FA8A71N	80
7MBR100VB060-50	17	7MBR15VKA120-50	16	7MBR50VP060-50	17	ESAD83-004R	119	FA5590N	86	FA8A74N	80
7MBR100VN120-50	19	7MBR15VKB120-50	16	7MBR50VP120-50	19	ESAD83-006R	119	FA5591N	86	FA8A75N	80
7MBR100VP060-50	17	7MBR15VKC060-50	14	7MBR50VR120-50	19	ESAD83M-004RR	119	FA5601N	86	FA8A80N	80
7MBR100VR060-50	17	7MBR15VKC120-50	16	7MBR50VW120-50	22	ESAD83M-006RR	119	FA5604N	82	FA8A81N	80
7MBR100VR120-50	19	7MBR15VKD120-50	16	7MBR50VX120-50	22	ESAD92-02R	127	FA5605N	82	FA8A83N	80
7MBR100VX120-50	22	7MBR15XKA065-50	14	7MBR50VX120-80	22	ESAD92-03R	127	FA5606N	82	FA8A84N	80
7MBR100VX120-80	22	7MBR15XKA120-50	15	7MBR50VY060-50	20	ESAD92M-02RR	127	FA5607N	82	FA8A85N	80
7MBR100VY060-50	20	7MBR15XKB120-50	15	7MBR50VY120-50	22	ESAD92M-03RR	127	FA5612N	86	FA8A86N	80
7MBR100VZ060-50	20	7MBR15XKC065-50	14	7MBR50VZ120-50	22	ESAE92-03R	127	FA5613N	86	FA8A87N	80
7MBR100VZ060-80	20	7MBR15XKC120-50	15	7MBR50VZ120-80	22	ESAF92-03R	127	FA5614N	86	FA8A90N	80
7MBR100VZ120-50	22	7MBR15XKD120-50	15	7MBR50XKB065-50	14	F5018	114	FA5615N	86	FA8A91N	80
7MBR100VZ120-80	22	7MBR20VKA060-50	14	7MBR50XKD065-50	14	F5019	114	FA5640N	84	FA8A94N	80
7MBR100XNA065-50	17	7MBR20VKC060-50	14	7MBR50XMA065-50	17	F5020	114	FA5641N	84	FA8A95N	80
7MBR100XNA120-50	18	7MBR20XKA065-50	14	7MBR50XMA120-50	18	F5033	114	FA5642N	84	FA8B16N	80
7MBR100XPE065-50	17	7MBR20XKC065-50	14	7MBR50XPA065-50	17	F5041	114	FA5643N	84	FDC2AT06S65	73
7MBR100XRA065-50	17	7MBR25VA120-50	19	7MBR50XPA120-50	18	F5042	114	FA5644N	84	FDC2AT08S65	73
7MBR100XRA120-50	18	7MBR25VKB120-50	16	7MBR50XPE120-50	18	F5043	114	FA5648N	84	FDC2AT10S65	73
7MBR100XRE120-50	18	7MBR25VKD120-50	16	7MBR50XRKB120-50	15	F5055	114	FA5650N	89	FDC2PT06S65	73
7MBR100XXA065-50	20	7MBR25VM120-50	19	7MBR50XRKD120-50	15	F5063L	114	FA5651N	89	FDC2PT08S65	73
7MBR100XXA120-50	21	7MBR25VP120-50	19	7MBR50XWA065-50	20	F5074H	114	FA5680N	80	FDC2PT10S65	73
7MBR100XYE065-50	20	7MBR25VW120-50	22	7MBR50XWA120-50	21	F5106H	114	FA5681N	80	FDC2WT20S120	73
7MBR100XZA065-50	20	7MBR25VY120-50	22	7MBR50XYA065-50	20	F5112H	114	FA5696N	86	FDC2WT40S120	73
7MBR100XZA120-50	21	7MBR25XKA120-50	15	7MBR50XYA120-50	21	F5114H	114	FA5752N	89	FDCA10S65	74
7MBR10VKA060-50	14	7MBR25XKB120-50	15	7MBR75VB060-50	17	FA13842N	82	FA6A00AN	88	FDCA18S120	74

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

Type Number Index

	Page		Page		Page		Page		Page		Page
FDCA20C65	74	FGW30N60VD	65	FMA49N20T2	110	FMH11N90E	102	FML19N50G	107	FMR23N50ES	103
FDCA25S65	74	FGW30N65W	64	FMA65N15T2	110	FMH13N60ES	104	FML20N50ES	103	FMR23N60E	101
FDCC10S65	74	FGW30XS65	64	FMA80N10T2	110	FMH13N80E	101	FML60N093S2FD	98	FMR23N60ES	104
FDCC10S65A	75	FGW30XS65C	64	FMC03N60E	101	FMH16N50E	100	FML60N104S2FD	98	FMR28N50E	100
FDCC20C65	74	FGW35N60H	65	FMC05N50E	100	FMH16N50ES	103	FML60N118S2FD	98	FMR28N50ES	103
FDCC20C65A	75	FGW35N60HC	65	FMC05N60E	101	FMH16N60ES	104	FML60N150S2FD	98	FMV03N60E	101
FDCC25S65	74	FGW35N60HD	65	FMC06N60ES	104	FMH17N60ES	104	FML60N191S2FD	98	FMV05N50E	100
FDCC25S65A	75	FGW40N120H	65	FMC06N80E	101	FMH19N60E	101	FMP03N60E	101	FMV05N60E	101
FDCP10S65	74	FGW40N120HD	65	FMC06N90E	102	FMH19N60ES	104	FMP05N50E	100	FMV06N60E	101
FDCP10S65A	75	FGW40N120VD	65	FMC07N50E	100	FMH20N50E	100	FMP05N60E	101	FMV06N60ES	104
FDCP20C65	74	FGW40N120W	64	FMC07N90E	102	FMH20N50ES	103	FMP06N60E	101	FMV06N80E	101
FDCP20C65A	75	FGW40N120WD	64	FMC08N80E	101	FMH21N50ES	103	FMP06N60ES	104	FMV06N90E	102
FDCP25S65	74	FGW40N120WE	64	FMC10N60E	101	FMH23N50E	100	FMP07N50E	100	FMV07N50E	100
FDCP25S65A	75	FGW40N65W	64	FMC11N60E	101	FMH23N50ES	103	FMP08N50E	100	FMV07N65E	101
FDCW18T120	74	FGW40N65WD	64	FMC12N50E	100	FMH23N60E	101	FMP10N60E	101	FMV07N70E	101
FDCY10S65	74	FGW40N65WE	64	FMC12N50ES	103	FMH23N60ES	104	FMP11N60E	101	FMV07N90E	102
FDCY10S65A	75	FGW40XS120	64	FMC12N60ES	104	FMH28N50E	100	FMP12N50E	100	FMV08N50E	100
FDCY18S120	74	FGW40XS120C	64	FMC13N60E	101	FMH28N50ES	103	FMP12N50ES	103	FMV08N80E	101
FDCY18S120A	75	FGW40XS65	64	FMC13N60ES	104	FMH60N190S2	96	FMP12N60ES	104	FMV09N65E	101
FDCY20C65	74	FGW40XS65C	64	FMC16N50E	100	FMH60N280S2	96	FMP13N60E	101	FMV09N70E	101
FDCY20C65A	75	FGW50N60H	65	FMC16N50ES	103	FMI03N60E	101	FMP13N60ES	104	FMV09N90E	102
FDCY25S65	74	FGW50N60HC	65	FMC16N60E	101	FMI05N50E	100	FMP16N50E	100	FMV10N60E	101
FDCY25S65A	75	FGW50N60HD	65	FMC16N60ES	104	FMI05N60E	101	FMP16N50ES	103	FMV10N80E	101
FDCY36C120	74	FGW50N60VD	65	FMC20N50E	100	FMI06N60ES	104	FMP16N60E	101	FMV11N60E	101
FDCY36C120A	75	FGW50N65W	64	FMC20N50ES	103	FMI06N80E	101	FMP16N60ES	104	FMV11N70E	101
FDCY50C65	74	FGW50N65WD	64	FMC40N060S2FDA	112	FMI06N90E	102	FMP20N50E	100	FMV11N90E	102
FDCY50C65A	75	FGW50N65WE	64	FMC49N20T2	110	FMI07N50E	100	FMP20N50ES	103	FMV12N50E	100
FDRP15S60L	129	FGW50XS65	64	FMC50N071S2FDA	112	FMI07N90E	102	FMP49N20T2	110	FMV12N50ES	103
FDRP25S60L	129	FGW50XS65C	64	FMC60N079S2A	111	FMI08N80E	101	FMP60N079S2	97	FMV12N60ES	104
FDRW12S120J	130	FGW50XS65D	64	FMC60N081S2FDA	112	FMI10N60E	101	FMP60N084S2FD	98	FMV13N60E	101
FDRW15S60L	129	FGW60N65W	64	FMC60N088S2A	111	FMI11N60E	101	FMP60N088S2	97	FMV13N60ES	104
FDRW20S120J	130	FGW60N65WD	64	FMC60N099S2A	111	FMI12N50E	100	FMP60N094S2FD	98	FMV13N80E	101
FDRW25S60L	129	FGW60N65WE	64	FMC60N105S2FDA	112	FMI12N50ES	103	FMP60N099S2	96	FMV15N70E	101
FDRW30S120J	130	FGW75N60H	65	FMC60N125S2A	111	FMI12N60ES	104	FMP60N105S2FD	98	FMV16N50E	100
FDRW35S60L	129	FGW75N60HC	65	FMC60N133S2FDA	112	FMI13N60E	101	FMP60N125S2	96	FMV16N50ES	103
FDRW40C120J	130	FGW75N60HD	65	FMC60N160S2A	111	FMI13N60ES	104	FMP60N133S2FD	98	FMV16N60E	101
FDRW50C60L	129	FGW75N65W	64	FMC60N190S2A	111	FMI16N50E	100	FMP60N160S2	96	FMV16N60ES	104
FDRW60C120J	130	FGW75N65WE	64	FMC65N15T2	110	FMI16N50ES	103	FMP60N170S2FD	98	FMV17N60ES	104
FDRW60T65L	129	FGW75XS120	64	FMC80N10R6	110	FMI16N60E	101	FMP60N190S2	96	FMV19N60E	101
FDRW70C60L	129	FGW75XS120C	64	FMC80N10R6	113	FMI16N60ES	104	FMP60N280S2	96	FMV19N60ES	104
FDRW75T60L	129	FGW75XS65	64	FMC80N10T2	110	FMI20N50E	100	FMP60N380S2	96	FMV20N50E	100
FGW15N120H	65	FGW75XS65C	64	FMH06N80E	101	FMI20N50ES	103	FMP65N15T2	110	FMV20N50ES	103
FGW15N120HD	65	FGW75XS65D	64	FMH06N90E	102	FMI49N20T2	110	FMP80N10T2	110	FMV21N50ES	103
FGW15N120VD	65	FGW85N60RB	65	FMH07N70E	101	FMI65N15T2	110	FMR09N90E	102	FMV23N50E	100
FGW25N120VD	65	FGZ40N120WE	64	FMH07N90E	102	FMI80N10T2	110	FMR11N90E	102	FMV23N50ES	103
FGW25N120W	64	FGZ50N65WD	64	FMH08N80E	101	FML12N50ES	103	FMR17N60ES	104	FMV24N25G	106
FGW25N120WD	64	FGZ50N65WE	64	FMH09N70E	101	FML12N60ES	104	FMR19N60E	101	FMV60N070S2	97
FGW25N120WE	64	FGZ75N65WE	64	FMH09N90E	102	FML13N60ES	104	FMR19N60ES	104	FMV60N075S2FD	98
FGW30N120H	65	FGZ75XS120C	64	FMH10N80E	101	FML16N50ES	103	FMR21N50ES	103	FMV60N079S2	97
FGW30N120HD	65	FGZ75XS65C	64	FMH11N70E	101	FML16N60ES	104	FMR23N50E	100	FMV60N084S2FD	98

	Page		Page		Page		Page		Page		Page
FMV60N088S2	97	FMV60N125S2A	111	TP868C10R	123	YA868C08R	122	YG862C06R	122	YG982S6R	125
FMV60N094S2FD	98	FMV60N133S2FDA	112	TP869C06R	122	YA868C10R	123	YG862C08R	122	YG985C3R	128
FMV60N099S2	96	FMV60N160S2A	111	TP869C08R	122	YA868C12R	123	YG862C10R	123	YG985C4R	128
FMV60N105S2FD	98	FMV67N30ESF	114	TP869C10R	123	YA868C15R	123	YG862C12R	123	YG985C6R	125
FMV60N125S2	96	FMV72N30ES	113	TP901C2R	127	YA869C06R	122	YG862C15R	123		
FMV60N133S2FD	98	KP883C02	119	TP902C2R	127	YA869C08R	122	YG865C04R	122		
FMV60N160S2	96	KP923C2	126	TP902C3R	127	YA869C10R	123	YG865C06R	122		
FMV60N170S2FD	98	KP926S2	126	TP906C2R	127	YA869C12R	123	YG865C08R	122		
FMV60N190S2	96	KS823C03	119	TS802C04R	119	YA869C15R	123	YG865C10R	123		
FMV60N280S2	96	KS823C04	119	TS805C04R	119	YA872C10R	120	YG865C12R	123		
FMV60N380S2	96	KS823C09	119	TS808C06R	119	YA872C12R	120	YG865C15R	123		
FMW60N025S2	97	KS826S04	118	TS862C06R	122	YA872C15R	120	YG868C04R	122		
FMW60N027S2FD	98	KS883C02	119	TS862C08R	122	YA872C20R	120	YG868C06R	122		
FMW60N040S2	97	KS923C2	126	TS862C10R	123	YA875C10R	120	YG868C08R	122		
FMW60N043S2FD	98	KS926S2	126	TS862C12R	123	YA875C12R	120	YG868C10R	123		
FMW60N055S2	97	KS986S3	128	TS862C15R	123	YA875C15R	120	YG868C12R	123		
FMW60N059S2FD	98	KS986S4	128	TS865C04R	122	YA875C20R	120	YG868C15R	123		
FMW60N070S2	97	MS808C06	119	TS865C06R	122	YA878C10R	120	YG869C06R	122		
FMW60N075S2FD	98	MS838C04	119	TS865C08R	122	YA878C12R	120	YG869C08R	122		
FMW60N079S2	97	MS862C08	122	TS865C10R	123	YA878C15R	120	YG869C10R	123		
FMW60N084S2FD	98	MS865C04	122	TS865C12R	123	YA878C20R	120	YG869C12R	123		
FMW60N088S2	97	MS865C08	122	TS865C15R	123	YA971S6R	124	YG869C15R	123		
FMW60N094S2FD	98	MS865C10	123	TS868C04R	122	YA972S6R	124	YG872C10R	120		
FMW60N099S2	96	MS865C12	123	TS868C06R	122	YA975C6R	124	YG872C12R	120		
FMW60N105S2FD	98	MS865C15	123	TS868C08R	122	YA981S6R	125	YG872C15R	120		
FMW60N125S2	96	MS868C04	122	TS868C10R	123	YA982C3R	128	YG872C20R	120		
FMW60N133S2FD	98	MS868C10	123	TS868C12R	123	YA982C4R	128	YG875C10R	120		
FMW60N160S2	96	MS868C12	123	TS868C15R	123	YA982C6R	125	YG875C12R	120		
FMW60N170S2FD	98	MS868C15	123	TS902C2R	127	YA982S6R	125	YG875C15R	120		
FMW60N190S2	96	MS906C2	126	TS902C3R	127	YA985C3R	128	YG875C20R	120		
FMV100N06T	113	MS906C3	126	TS906C2R	127	YA985C4R	128	YG878C10R	120		
FMV100N10R6	110	MS985C3	128	TS982C3R	128	YA985C6R	125	YG878C12R	120		
FMV100N10R6	113	MS985C4	128	TS982C4R	128	YG801C04R	119	YG878C15R	120		
FMV22N60ESF	114	PA868C10R	123	TS982C6R	125	YG801C06R	119	YG878C20R	120		
FMV24N60ES	113	PA868C15R	123	TS985C3R	128	YG801C10R	119	YG901C2R	126		
FMV30N60ESF	114	PA905C4R	127	TS985C4R	128	YG802C04R	119	YG901C3R	126		
FMV31N60ES	113	PG865C15R	123	TS985C6R	125	YG802C06R	119	YG902C2R	126		
FMV35N60ESF	114	PG985C3R	128	YA862C06R	122	YG802C10R	119	YG902C3R	126		
FMV36N60ES	113	PG985C4R	128	YA862C08R	122	YG803C06R	119	YG906C2R	126		
FMV47N30ESF	114	PH865C12	123	YA862C10R	123	YG804S06R	118	YG911S2R	126		
FMV50N071S2FDA	112	PH865C15	123	YA862C12R	123	YG805C04R	119	YG911S3R	126		
FMV50N30ES	113	PH868C12	123	YA862C15R	123	YG805C06R	119	YG912S2R	126		
FMV60N025S2A	111	PH868C15	123	YA865C04R	122	YG805C10R	119	YG971S6R	124		
FMV60N040S2A	111	PH975C6	124	YA865C06R	122	YG808C10R	119	YG971S8R	124		
FMV60N070S2A	111	PH985C6	125	YA865C08R	122	YG811S04R	118	YG972S6R	124		
FMV60N079S2A	111	TP802C04R	119	YA865C10R	123	YG811S06R	118	YG975C6R	124		
FMV60N081S2FDA	112	TP862C12R	123	YA865C12R	123	YG812S04R	118	YG981S6R	125		
FMV60N088S2A	111	TP862C15R	123	YA865C15R	123	YG838C04R	119	YG982C3R	128		
FMV60N099S2A	111	TP865C12R	123	YA868C04R	122	YG861S12R	121	YG982C4R	128		
FMV60N105S2FDA	112	TP865C15R	123	YA868C06R	122	YG861S15R	121	YG982C6R	125		

- Models listed below are for maintenance products only.
- Do not use them for new designing

Products	Type number	Products	Type number	Products	Type number
Power Devices	2MBI100TA-060-50	Power Devices	7MBP150RTB060	Power MOSFETs	FMW20N60S1
	2MBI150TA-060-50		7MBP150RTB060-50		FMW20N60S1FD
	2MBI150U2A-060-50		7MBP150RTJ060		FMW22N60S1
	2MBI200U2A-060-50		7MBP150TEA060-50		FMW22N60S1FD
	2MBI300U2B-060-50		7MBP160RTA060-50		FMW30N60S1
	2MBI400U2B-060-50		7MBP200RA060		FMW30N60S1FD
	6MBP100RA060		7MBP200RUC060		FMW35N60S1
	6MBP100RA120		7MBP200RUC060-50		FMW35N60S1FD
	6MBP100RTB060		7MBP25RA120		FMW40N60S1
	6MBP100RTB060-50		7MBP25RU2A120-50		FMW40N60S1FD
	6MBP100RTD060-50		7MBP50RE120		FMW47N60S1
	6MBP100RTJ060		7MBP50RTA060-50		FMW47N60S1FD
	6MBP100TEA060		7MBP50RTB060-50		FMW57N60S1
	6MBP100TEA060-50		7MBP50RU2A120-50		FMW57N60S1FD
	6MBP150RA060		7MBP75RE120		FMW79N60S1
	6MBP150RA120		7MBP75RTB060-50		FMW79N60S1FD
	6MBP150RTB060		7MBP75RU2A120		
	6MBP150RTB060-50		7MBP75RU2A120-50		
	6MBP150RTJ060		7MBP75TEA060-50		
	6MBP150TEA060-50		7MBP75TEA120-50		
	6MBP15RA120		7MBP80RTA060-50		
	6MBP200RA060	Power MOSFETs	FMH13N60S1		
	6MBP20RTA060		FMH15N60S1		
	6MBP25RA120		FMH20N60S1		
	6MBP25RJ120		FMH20N60S1FD		
	6MBP25RU2A120		FMH22N60S1		
	6MBP25TEA120-50		FMH22N60S1FD		
	6MBP300RA060		FMH30N60S1		
	6MBP30RTB060		FMH30N60S1FD		
	6MBP30RTB060-50		FMH35N60S1		
	6MBP35RJB120-50		FMH35N60S1FD		
	6MBP50RA060		FMH40N60S1		
	6MBP50RA120		FMH40N60S1FD		
	6MBP50RJ120		FMH47N60S1		
	6MBP50RTB060		FMH47N60S1FD		
	6MBP50RTJ060		FMP07N60S1		
	6MBP50RU2A120		FMP08N60S1		
	6MBP50TBA060-50		FMP10N60S1		
	6MBP50TEA060		FMP13N60S1		
	6MBP50TEA060-50		FMP15N60S1		
	6MBP50TEA120-50		FMP20N60S1		
	6MBP75RA060		FMP20N60S1FD		
	6MBP75RA120		FMP22N60S1		
	6MBP75RJ120		FMP22N60S1FD		
	6MBP75RTB060		FMP30N60S1		
	6MBP75RTB060-50		FMP30N60S1FD		
	6MBP75RTJ060		FMV07N60S1		
	6MBP75RU2A120		FMV08N60S1		
	6MBP75RU2A120-50		FMV10N60S1		
	6MBP75TBA060-50		FMV13N60S1		
	6MBP75TEA060-50		FMV15N60S1		
	6MBP75TEA120-50		FMV20N60S1		
	7MBP100RA060		FMV20N60S1FD		
	7MBP100RA120		FMV22N60S1		
	7MBP100RTA060-50		FMV22N60S1FD		
	7MBP100RTB060		FMV30N60S1		
	7MBP100RTB060-50		FMV30N60S1FD		
	7MBP100RTJ060		FMV35N60S1		
	7MBP100TEA060-50		FMV35N60S1FD		
	7MBP150RA060		FMV40N60S1		
	7MBP150RA120		FMV15N60S1		

- Models listed below are discontinued products.
- Do not use them for new designing

Products	Type number	Products	Type number	Products	Type number
Power Devices	1MBI1200U4C-120 1MBI1200U4C-170 1MBI150NH-060 1MBI150NK-060 1MBI1600U4C-120 1MBI1600U4C-170 1MBI200N-120 1MBI200NH-060 1MBI200NK-060 1MBI2400U4D-120 1MBI2400U4D-170 1MBI300N-120 1MBI300NN-120 1MBI300NP-120 1MBI300U4-120 1MBI3600U4D-120 1MBI3600U4D-170 1MBI400N-120 1MBI400NN-120 1MBI400NP-120 1MBI400U4-120 1MBI600NN-060 1MBI600NP-060 1MBI600PX-120 1MBI600PX-140 1MBI600U4-120 1MBI600U4B-120 1MBI800U4B-120 2FI1200U4L-120 2MBI100N-060 2MBI100N-120 2MBI100NB-120 2MBI100NC-120 2MBI100PC-140 2MBI100SC-120 2MBI100U4A-120 2MBI100U4A-120-50 2MBI100U4H-170-50 2MBI1200U4G-120 2MBI1200U4G-170 2MBI150N-060 2MBI150N-120 2MBI150NB-120 2MBI150NC-060 2MBI150NC-120 2MBI150PC-140 2MBI150SC-120 2MBI150U4A-120 2MBI150U4A-120-50 2MBI150U4B-120 2MBI150U4B-120-50 2MBI150U4H-120 2MBI150U4H-120-50 2MBI150U4H-170 2MBI150U4H-170-50 2MBI150UA-120 2MBI150UA-120-50 2MBI150UB-120-50 2MBI200N-060 2MBI200N-060-03 2MBI200N-120 2MBI200NB-120 2MBI200NB-120-01	Power Devices	2MBI200PB-140 2MBI200S-120 2MBI200U4B-120 2MBI200U4B-120-50 2MBI200U4D-120 2MBI200U4D-120-50 2MBI200U4H-120 2MBI200U4H-120-50 2MBI200U4H-170 2MBI200U4H-170-50 2MBI200UB-120 2MBI200UB-120-50 2MBI200UC-120-50 2MBI200UD-120-50 2MBI200UM-120 2MBI200UM-120-50 2MBI225U4J-120-50 2MBI225U4N-120-50 2MBI225U4N-170-50 2MBI300N-060 2MBI300N-060-04 2MBI300N-120 2MBI300N-120-01 2MBI300NB-060 2MBI300NB-060-01 2MBI300P-140 2MBI300S-120 2MBI300U4D-120 2MBI300U4D-120-50 2MBI300U4E-120 2MBI300U4H-120 2MBI300U4H-120-50 2MBI300U4H-170 2MBI300U4H-170-50 2MBI300U4J-120-50 2MBI300U4N-120-50 2MBI300U4N-170-50 2MBI300UC-120 2MBI300UC-120-50 2MBI300UC-170 2MBI300UD-120 2MBI300UD-120-50 2MBI300UE-120 2MBI400N-060 2MBI400N-060-01 2MBI400U4H-120 2MBI400U4H-120-50 2MBI400U4H-170 2MBI400U4H-170-50 2MBI450U4E-120 2MBI450U4J-120-50 2MBI450U4N-120-50 2MBI450U4N-170-50 2MBI450UE-120 2MBI50N-060 2MBI50N-120 2MBI50P-140 2MBI600NT-060 2MBI600U4G-120 2MBI600U4G-170 2MBI75N-060 2MBI75N-120 2MBI75P-140	Power Devices	2MBI75U4A-120 2MBI75U4A-120-50 2MBI75UA-120 2MBI75UA-120-50 2MBI800U4G-120 2MBI800U4G-170 6MBI100S-060 6MBI100S-120 6MBI100S-140 6MBI100U4B-120-50 6MBI100U4B-170-50 6MBI100UB-120-50 6MBI10S-120 6MBI150U4B-120-50 6MBI150U4B-170-50 6MBI150UB-120-50 6MBI15S-120 6MBI225U4-120 6MBI225U4-120-50 6MBI25S-120 6MBI300U4-120 6MBI300U4-120-50 6MBI300U4-170 6MBI35S-120 6MBI35S-140 6MBI35U4A-120-50 6MBI450U-120 6MBI450U-170 6MBI450U4-120 6MBI450U4-120-50 6MBI450U4-170 6MBI50S-060 6MBI50S-120 6MBI50S-140 6MBI50U4A-120-50 6MBI50UA-120-50 6MBI75S-060 6MBI75S-120 6MBI75S-140 6MBI75U4A-120-50 6MBI75U4B-120-50 6MBI75UA-120-50 6MBP15RH060-50 6MBP20RH060-50 6MBP30RH060-50 7MBR100SB060 7MBR100SD060 7MBR100SD060-50 7MBR100U4B120-50 7MBR100UB120-50 7MBR10SA120 7MBR10SA140 7MBR10SC120 7MBR10SC120-50 7MBR10UF120 7MBR15SA120 7MBR15SA140 7MBR15SC060-50 7MBR15SC120 7MBR15SC120-50 7MBR15UF060 7MBR15UF120 7MBR20SC060

IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline

Index • Others

Products	Type number	Products	Type number	Products	Type number
Power Devices	7MBR20SC060-50	Power Supply Control ICs	FA7763R-R1	Rectifier Diodes	SC802-06
	7MBR20UF060		FA3641P		SC802-09
	7MBR25SA120		FA3647P		SC902-2
	7MBR25SA140		FA13842P		SD832-03
	7MBR25SC120		FA13843P		SD832-04
	7MBR25SC120-50		FA13844P		SD833-03
	7MBR25U4P120-50		FA13845P		SD833-04
	7MBR25UA120-50		FA5502P		SD833-06
	7MBR30SA060		FA5504P		SD833-09
	7MBR30SC060		FA5510P		SD834-03
	7MBR30SC060-50		FA5511P		SD834-04
	7MBR30UF060		FA5514P		SD862-04
	7MBR35SB120		FA5515P		SD863-04
	7MBR35SB140		FA7764P		SD863-06
	7MBR35SD120		FA5760N		SD863-10
	7MBR35SD120-50	Hybrid ICs for IGBT Drive	EXB840		SD882-02
	7MBR35U4A120-50		EXB841		SD883-02
	7MBR35U4P120-50	IPS (Intelligent Power switch)	F5016H		SD883-04
	7MBR35UA120-50		F5017H		TP858C12R
	7MBR35UB120-50		F5021H		TP869C04R
	7MBR50SA060		F5022		TS862C04R
	7MBR50SB060		F5038H		TS906C3R
	7MBR50SB120	Rectifier Diodes	CB803-03		TS952C6R
	7MBR50SB140		CB863-06		TS955C6R
	7MBR50SC060		CB863-12		YA852C12R
	7MBR50SC060-50		CB863-15		YA852C15R
	7MBR50SD060-50		CB903-4		YA855C12R
	7MBR50SD120		ERA81-004		YA855C15R
	7MBR50SD120-50		ERA82-004		YA858C12R
	7MBR50U4P120-50		ERA83-004		YA858C15R
	7MBR50UA120-50		ERA83-006		YA862C04R
	7MBR50UB120-50		ERA84-009		YA869C04R
	7MBR75SB060		ERA85-009		YA951S6R
	7MBR75SD060		ERA91-02		YA952C6R
	7MBR75SD060-50		ERA92-02		YA952S6R
	7MBR75U4B120-50		ERB81-004		YA955C6R
	7MBR75U4R120-50		ERB83-004		YG801C09R
	7MBR75UB120-50		ERB83-006		YG802C03R
Power Supply Control ICs	FA3630V-H1		ERB84-009		YG802C09R
	FA3635S-H1		ERB91-02		YG803C04R
	FA3675F-H1		ERB93-02		YG803C09R
	FA3686V-H1		ERC81-004		YG811S09R
	FA3702AV-H1		ERC81-006		YG831C03R
	FA5316P		ERC81S-004		YG831C04R
	FA5317S		ERC84-009		YG832C03R
	FA5701P-A2		ERC91-02		YG832C04R
	FA5705AP-A2		FD867-12		YG835C03R
	FA5707AP-A2		FD867-15		YG835C04R
	FA5708AP-A2		FD868-12		YG838C03R
	FA7709R-H1		FD868-15		YG852C12R
	FA7711V-H1		FDLA20C20		YG852C15R
	FA7716R-H4		FDLC20C20		YG855C12R
	FA7723R-H4		FDLH20C20		YG855C15R
	FA7724AR-H4		FDLP20C20		YG858C12R
	FA7724R-H4		FDLR20C20		YG858C15R
	FA7728F-D1		KP823C03		YG862C04R
	FA7729R-H1		KP823C04		YG864S06R
	FA7730F-D1		KP823C09		YG869C04R
	FA7731F-D1		PA955C6R		YG881C02R
	FA7743N-D1		PG985C6R		YG882C02R
	FA7761R-R1		SC802-04		YG885C02R
	FA7763AR-R1				YG906C3R
					YG951S6R
					YG952C6R

Products	Type number	Products	Type number
Rectifier Diodes	YG952S6R YG955C6R	Power MOSFETs	2SK3675-01 2SK3677-01MR 2SK3678-01 2SK3679-01MR 2SK3690-01 2SK3691-01MR 2SK3769-01MR 2SK3770-01MR 2SK3771-01MR 2SK3776-01 2SK3777-01R 2SK3780-01 2SK3781-01R 2SK3788-01 2SK3789-01R 2SK3870-01 2SK3871-01MR 2SK3872-01L, S 2SK3873-01 2SK3874-01R 2SK3875-01 2SK3876-01R 2SK3883-01 2SK3884-01 2SK3885-01 2SK3913-01MR 2SK3914-01 2SK3915-01MR 2SK3923-01 2SK3924-01L, S 2SK3925-01 2SK3926-01MR 2SK3927-01L, S 2SK4005-01MR 2SK4006-01L, S FMA18N25G
Power MOSFETs	2SJ314-01L, S 2SJ472-01L, S 2SJ473-01L, S 2SJ474-01L, S 2SJ475-01 2SJ476-01L, S 2SJ477-01MR 2SK2687-01 2SK2688-01L, S 2SK2689-01MR 2SK2690-01 2SK2691-01R 2SK2806-01 2SK2807-01L, S 2SK2808-01MR 2SK2809-01MR 2SK2890-01MR 2SK2891-01 2SK2892-01R 2SK2893-01 2SK2894-01R 2SK2895-01 2SK2896-01L, S 2SK2897-01MR 2SK2898-01 2SK2899-01R 2SK2900-01 2SK2901-01L, S 2SK2902-01MR 2SK2903-01MR 2SK2904-01 2SK2905-01R 2SK2906-01 2SK2907-01R 2SK3362-01 2SK3363-01 2SK3364-01 2SK3517-01 2SK3518-01MR 2SK3529-01 2SK3530-01MR 2SK3531-01 2SK3532-01MR 2SK3533-01 2SK3534-01MR 2SK3549-01 2SK3550-01R 2SK3586-01 2SK3587-01MR 2SK3588-01L, S 2SK3589-01 2SK3601-01 2SK3605-01 2SK3613-01 2SK3644-01 2SK3645-01MR 2SK3646-01L, S 2SK3647-01 2SK3673-01MR 2SK3674-01L, S		

Global semiconductor website

We will continue to keep our global semiconductor website updated and fulfilled with new information on our semiconductor products including new products release, search function, data sheets, and the related exhibition for our customers all over the world.
We hope it will be of much use to our customers. Thank you.

Japanese: www.fujielectric.co.jp/products/semiconductor/

English: www.fujielectric.com/products/semiconductor/

Chinese: www.fujielectric.com/products/semiconductor/cn/

We would like to thank you for your continued patronage and further support for our semiconductor products.

WARNING

1. This Catalog contains the product specifications, characteristics, data, materials, and structures as of March 2021.
The contents are subject to change without notice for specification changes or other reasons. When using a product listed in this Catalog, be sure to obtain the latest specifications.
2. All applications described in this Catalog exemplify the use of Fuji's products for your reference only. No right or license, either express or implied, under any patent, copyright, trade secret or other intellectual property right owned by Fuji Electric Co., Ltd. is (or shall be deemed) granted. Fuji Electric Co., Ltd. makes no representation or warranty, whether express or implied, relating to the infringement or alleged infringement of other's intellectual property rights which may arise from the use of the applications described herein.
3. Although Fuji Electric Co., Ltd. is enhancing product quality and reliability, a small percentage of semiconductor products may become faulty. When using Fuji Electric semiconductor products in your equipment, you are requested to take adequate safety measures to prevent the equipment from causing a physical injury, fire, or other problem if any of the products become faulty. It is recommended to make your design fail-safe, flame retardant, and free of malfunction.
4. The products introduced in this Catalog are intended for use in the following electronic and electrical equipment which has normal reliability requirements.

• Computers	• OA equipment	• Communications equipment (terminal devices)	• Measurement equipment
• Machine tools	• Audiovisual equipment	• Electrical home appliances	• Personal equipment
			• Industrial robots etc.
5. If you need to use a product in this Catalog for equipment requiring higher reliability than normal, such as for the equipment listed below, it is imperative to contact Fuji Electric Co., Ltd. to obtain prior approval. When using these products for such equipment, take adequate measures such as a backup system to prevent the equipment from malfunctioning even if a Fuji's product incorporated in the equipment becomes faulty.

• Transportation equipment (mounted on cars and ships)	• Trunk communications equipment
• Traffic-signal control equipment	• Gas leakage detectors with an auto-shut-off feature
• Emergency equipment for responding to disasters and anti-burglary devices	• Safety devices
• Medical equipment	
6. Do not use products in this Catalog for the equipment requiring strict reliability such as the following and equivalents to strategic equipment (without limitation).

• Space equipment	• Aeronautic equipment	• Nuclear control equipment
• Submarine repeater equipment		
7. Copyright ©1996-2020 by Fuji Electric Co., Ltd. All rights reserved.
No part of this Catalog may be reproduced in any form or by any means without the express permission of Fuji Electric Co., Ltd.
8. If you have any question about any portion in this Catalog, ask Fuji Electric Co., Ltd. or its sales agents before using the product.
Neither Fuji Electric Co., Ltd. nor its agents shall be liable for any injury caused by any use of the products not in accordance with instructions set forth herein.

 **Fuji Electric Co., Ltd.**

Power Semiconductors Group

URL www.fujielectric.com/products/semiconductor/

Head Office:

Gate City Ohsaki, East Tower, 11-2 Osaki 1-chome,
Shinagawa-ku, Tokyo 141-0032, Japan



Fuji Electric (China) Co., Ltd.

26F, Global Harbor Tower B,
1188 North KaiXuan Road, PuTuo District,
Shanghai 200062, P.R.China
Tel: +86-21-5496-1177

Fuji Electric Hong Kong Co., Ltd.

Unit 1601-03 & 05, 16/F., Tower II, Grand Century Place,
No. 193 Prince Edward Road West, Mongkok, Kowloon, Honk Kong
Tel: +852-2664-8699

Fuji Electric Taiwan Co., Ltd.

10F. No.168, Song Jiang Road, Taipei, Taiwan
Tel: +886-2-2515-1820

Fuji Electric Asia Pacific Pte. Ltd.

151 Lorong Chuan, #03-01/01A New Tech Park, SINGAPORE 556741
Tel: +65-6533-0014

Fuji Electric India Private Ltd.

119(Part), 120, 120A, Electrical and Electronics Industrial Estate,
Perungudi, Chennai - 600096, Tamil Nadu, India
Tel: +91-44-40004200

Fuji Electric Corp. of America

50 Northfield Avenue
Edison, NJ 08837, USA
Tel: +1-732-560-9410

Fuji Electric Europe GmbH

Goethering 58, 63067 Offenbach am Main, F.R. GERMANY
Tel: +49-69-6690290

