Fuji Electric

Innovating Energy Technology

FUJI Power Semiconductors

IGBT/SiC Devices Selection Guide

CONTENTS

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

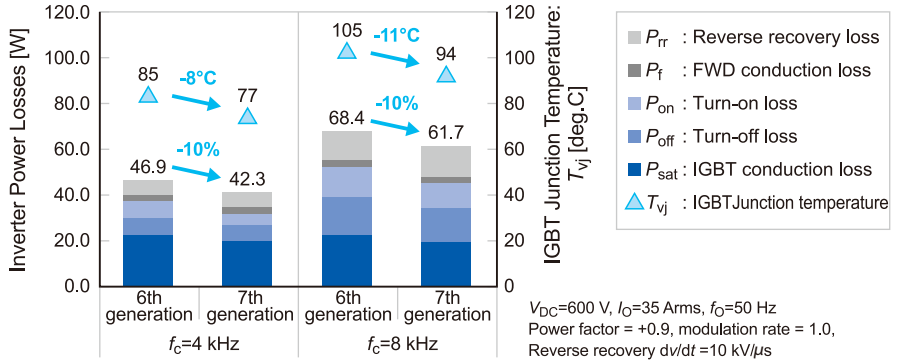
25A2-E-0005c

Features of IGBT Module X Series

1. Low loss

The module has been optimized by thinning the thickness and miniaturizing the structure of the IGBT chip and diode chip that makes up the module. This reduces power losses during inverter operation compared with previous products (our 6th generation V series).

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



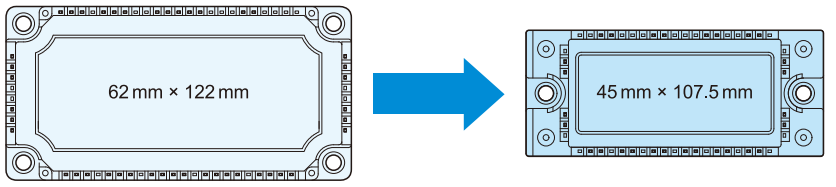
V_{DC}=600 V, I_O=35 Arms, f_O=50 Hz
Power factor = +0.9, modulation rate = 1.0,
Reverse recovery dv/dt =10 kV/μs

2. Miniaturization

The application of the newly developed insulating substrate has improved the heat dissipation of the module. A smaller footprint of about 36% has been achieved by reducing power loss and suppressing heat generation compared with the previous product.

Application example)

36% reduction



75 A (6th Generation V Series)

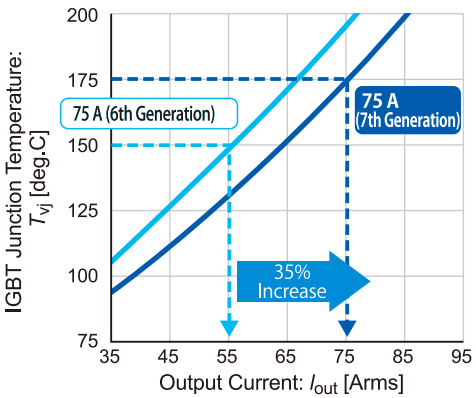
75 A (7th Generation X Series)

3. High-temperature operation

Achieves continuous operation at 175 °C through chip optimization and improved reliability and heat resistance of package.

- 35% more output current than the previous generation
- ΔT_{vj} power cycle capability improvement (twice as high as before)

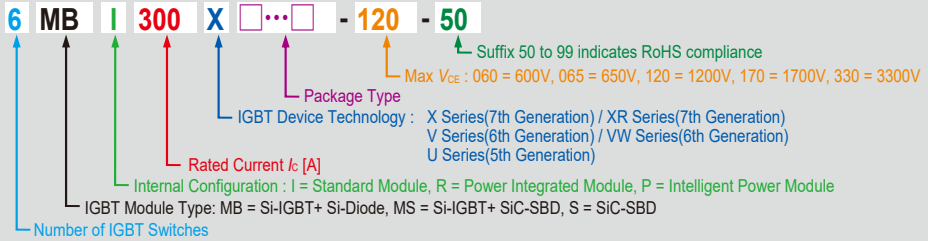
Increased output current by $T_{vj(op)}$=175℃



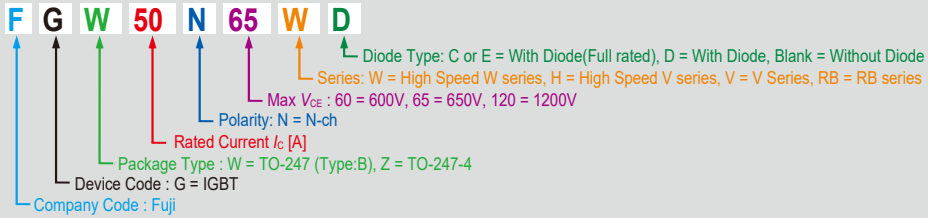
Number of IGBT Switches	Products Category	Page	Internal Configuration							Max V_{CE} (V_{RRM})					Rated Current					
			IGBT Module				Discrete IGBT	Rectifier Diode	Discrete SiC-SBD	600V	650V	1200V	1700V	3300V	≤50A	>50A ≤150A	>150A ≤300A	>300A ≤600A	>600A ≤1200A	>1200A
			Standard Module	Power Integrated Module	Intelligent Power Module	3-level Module														
7	**Small PIM**	9		✓						✓	✓	✓			✓					
	PIM EconoPIM™	10		✓						✓	✓	✓			✓	✓				
		11								✓	✓	✓			✓	✓				
6	**6-Pack EconoPACK™ EconoPACK™+**	12	✓							✓		✓			✓	✓	✓			
		13								✓		✓	✓		✓	✓	✓	✓		
2	**Standard 2-Pack**	14	✓							✓	✓	✓	✓			✓	✓	✓		
		15										✓	✓				✓	✓	✓	
1	**Standard 1-Pack**	16	✓									✓	✓				✓	✓	✓	
	Chopper	16	✓							✓		✓			✓	✓	✓	✓		
1,2	**High Speed Module**	17	✓									✓				✓	✓	✓		
	High Power Module	18,19	✓									✓	✓	✓				✓	✓	✓
	PrimePACK™	20,21	✓									✓	✓					✓	✓	✓
4,12	**T/I-type NPC 3-level**	22				✓				✓		✓	✓		✓	✓	✓	✓	✓	
6,7	**IPM**	23								✓	✓	✓			✓	✓				
		24,25			✓					✓	✓	✓			✓	✓				
		26								✓	✓	✓			✓	✓	✓			
		27								✓	✓	✓				✓	✓	✓		
1,2,6,7	**Hybrid SiC Module**	28,29	✓							✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
	All-SiC Module	30	✓									✓	✓				✓	✓		
1	**Discrete IGBT**	31					✓			✓	✓	✓			✓	✓				
–	**Rectifier Diode**	32						✓		✓	✓	✓			✓	✓				
–	**SiC-SBD**	33							✓		✓	✓			✓					

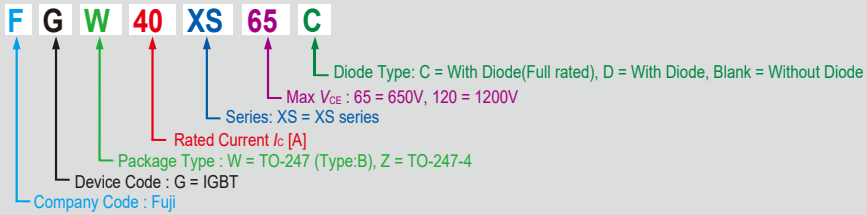
Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.
EconoPACK™, EconoPACK™+ are registered trademark of Infineon Technologies AG, Germany.

IGBT Module Production Number

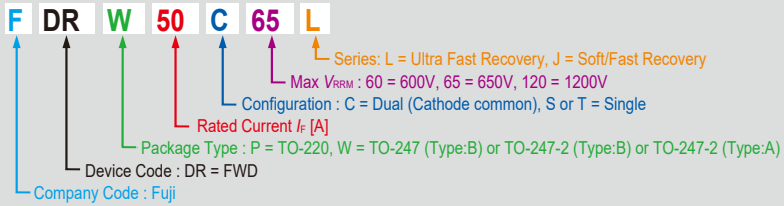


Discrete IGBT Production Number



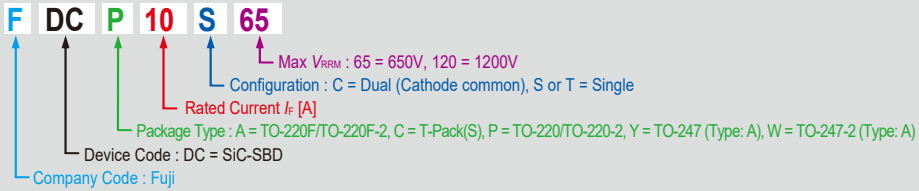


Rectifier Diode Production Number

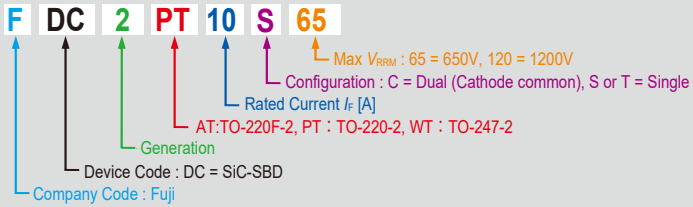


SiC Schottky-Barrier Diode Production Number

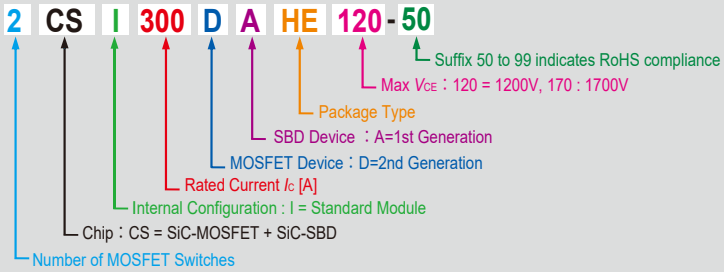
●SiC-SBD 1G



●SiC-SBD 2G



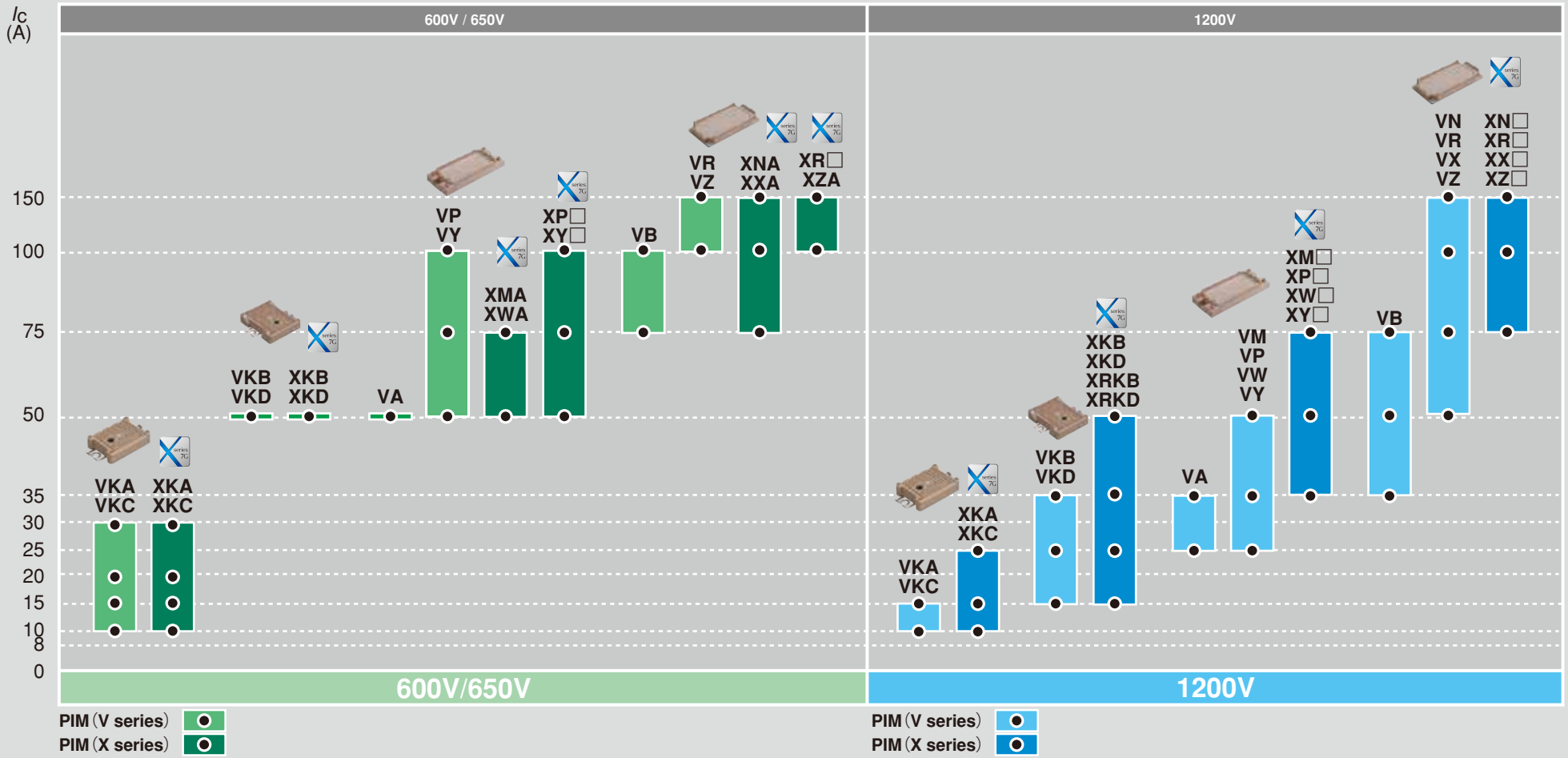
All-SiC Module Production Number



PIM (Power Integrated Modules) Products Map

7MBR	*Ic*	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	9	
		VKD	VKB	XKD, XRKD	XKB, XRKB	56.7×62.8mm	9	
		VA, VM, VP	VW, VY	XM□, XP□	XW□, XY□	45×107.5mm	10,11	EconoPIM™
		VB, VN, VR	VX, VZ	XN□, XR□	XX□, XZ□	62×122mm	10,11	

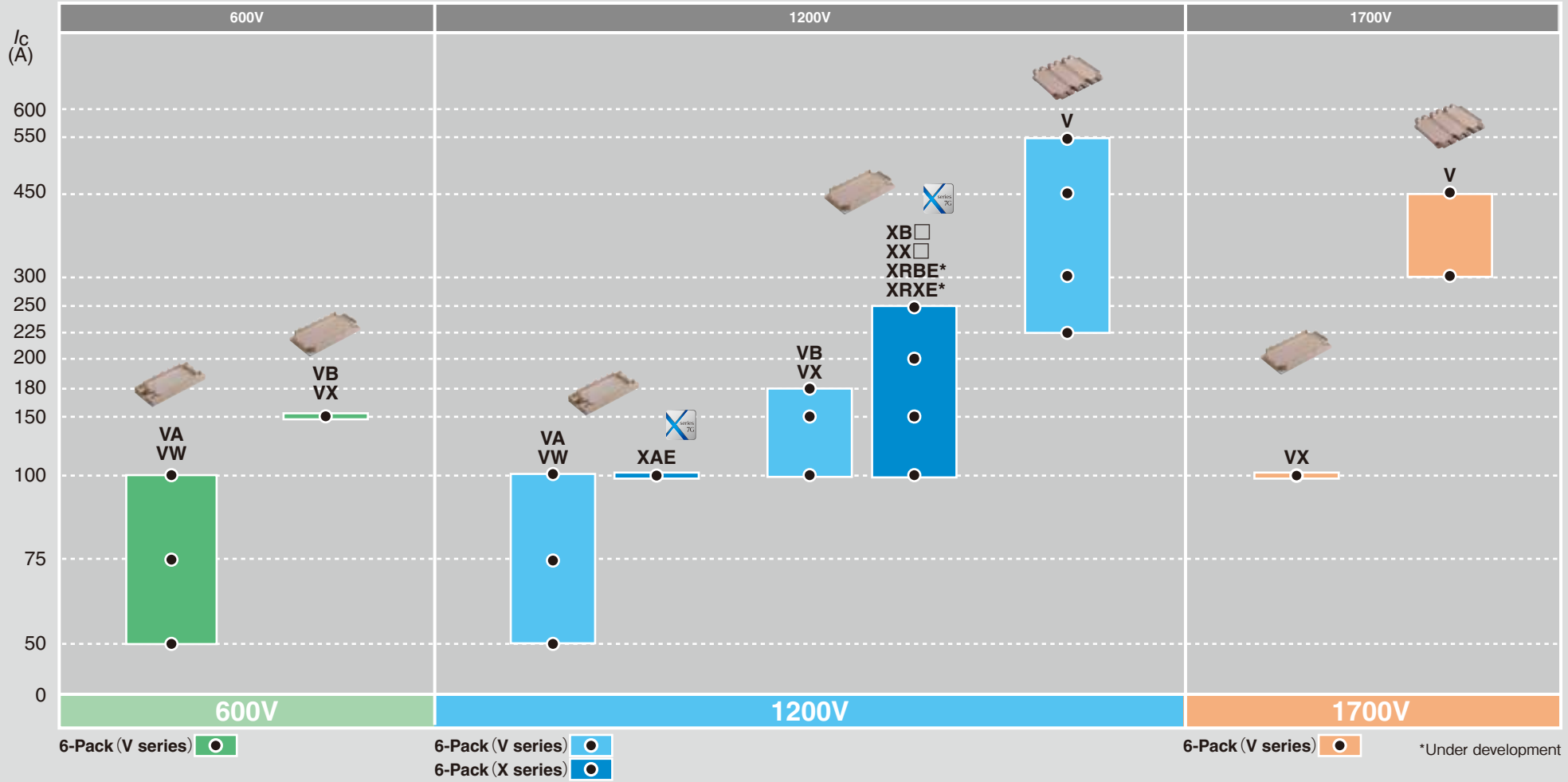
Note:
EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.



6-Pack Products Map

6MBI	Ic	IGBT series & Package type				Size	Page	
		V series		X series				
		Solder pins	Press fit pins	Solder pins	Press fit pins			
		VA	VW	XAE		45×107.5mm	12,13	EconoPACK™
		VB	VX	XB□, XRBE	XX□, XRXE	62×122mm	12,13	
		V				150×162mm	13	EconoPACK™+

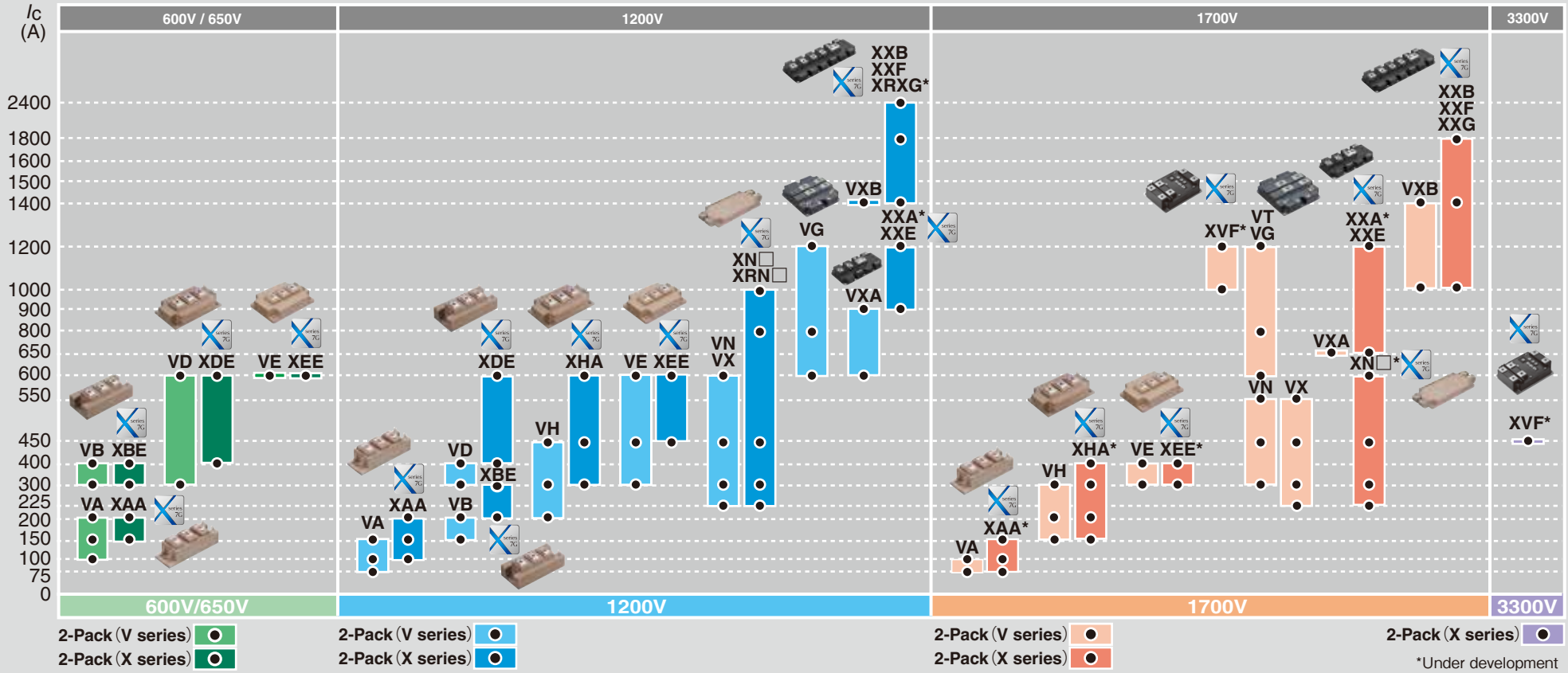
Note:
EconoPACK™ and EconoPACK™+ are registered trademark of Infineon Technologies AG, Germany.



2-Pack Products Map

2MBI	Ic	IGBT series & Package type		Size	Page	
		V series	X series			
		VA	XAA	34×94mm	14	Standard Pack
		VB	XBE	45×92mm	14	
		VD, VH	XDE, XHA	62×108mm	14	
		VE	XEE	80×110mm	14	
		VN, VX	XN□, XRN□	62×150mm	15	
		-	XVF	100×140mm	19	HPnC
		VG, VT	-	140×130mm	18	High Power Module
		VXA	XXA, XXE	89×172mm	20	PrimePACK™
		VXB	XXB, XXF, XXG, XRXG	89×250mm	20	

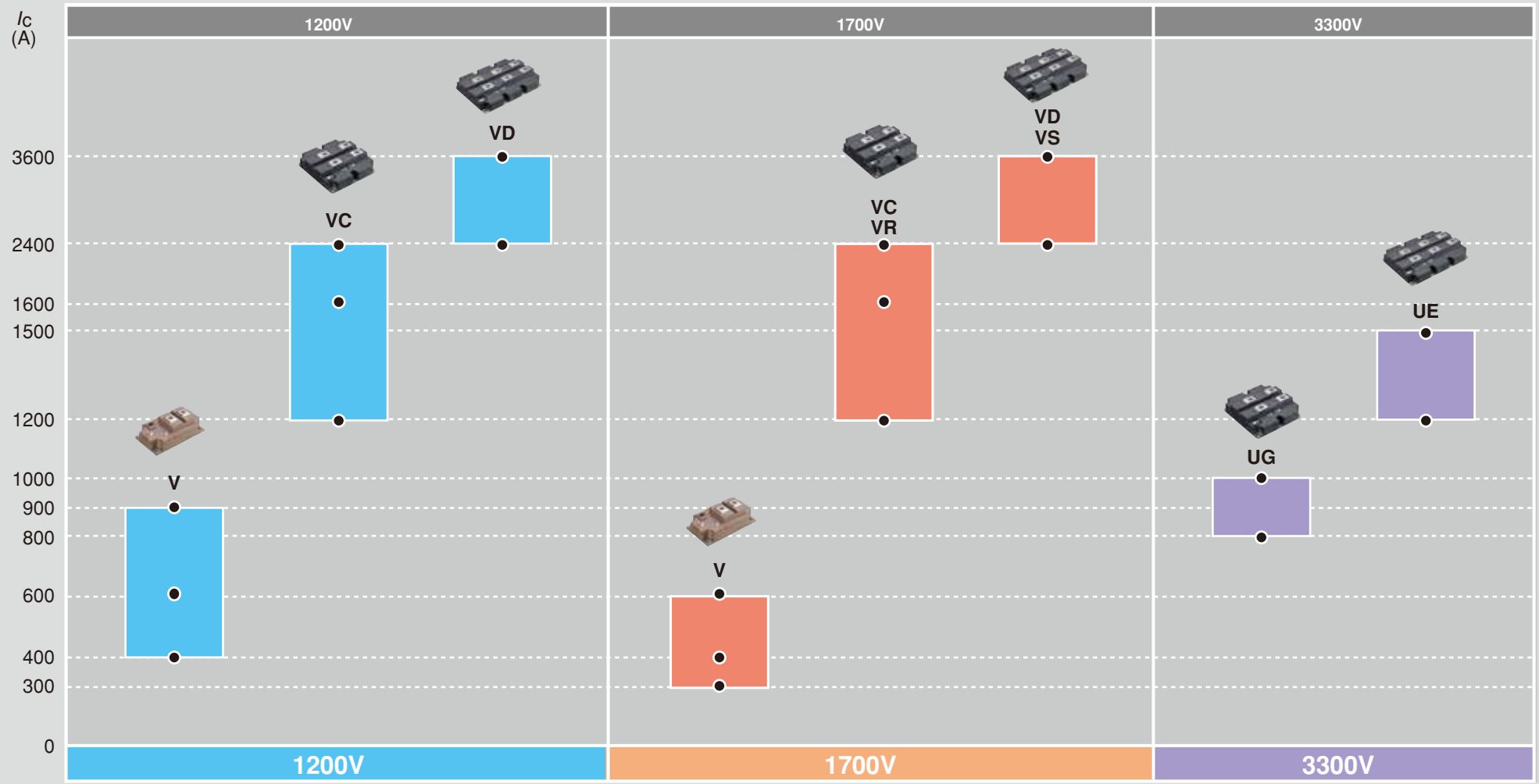
PrimePACK™ is registered trademark of Infineon Technologies AG, Germany



*Under development

1-Pack Products Map

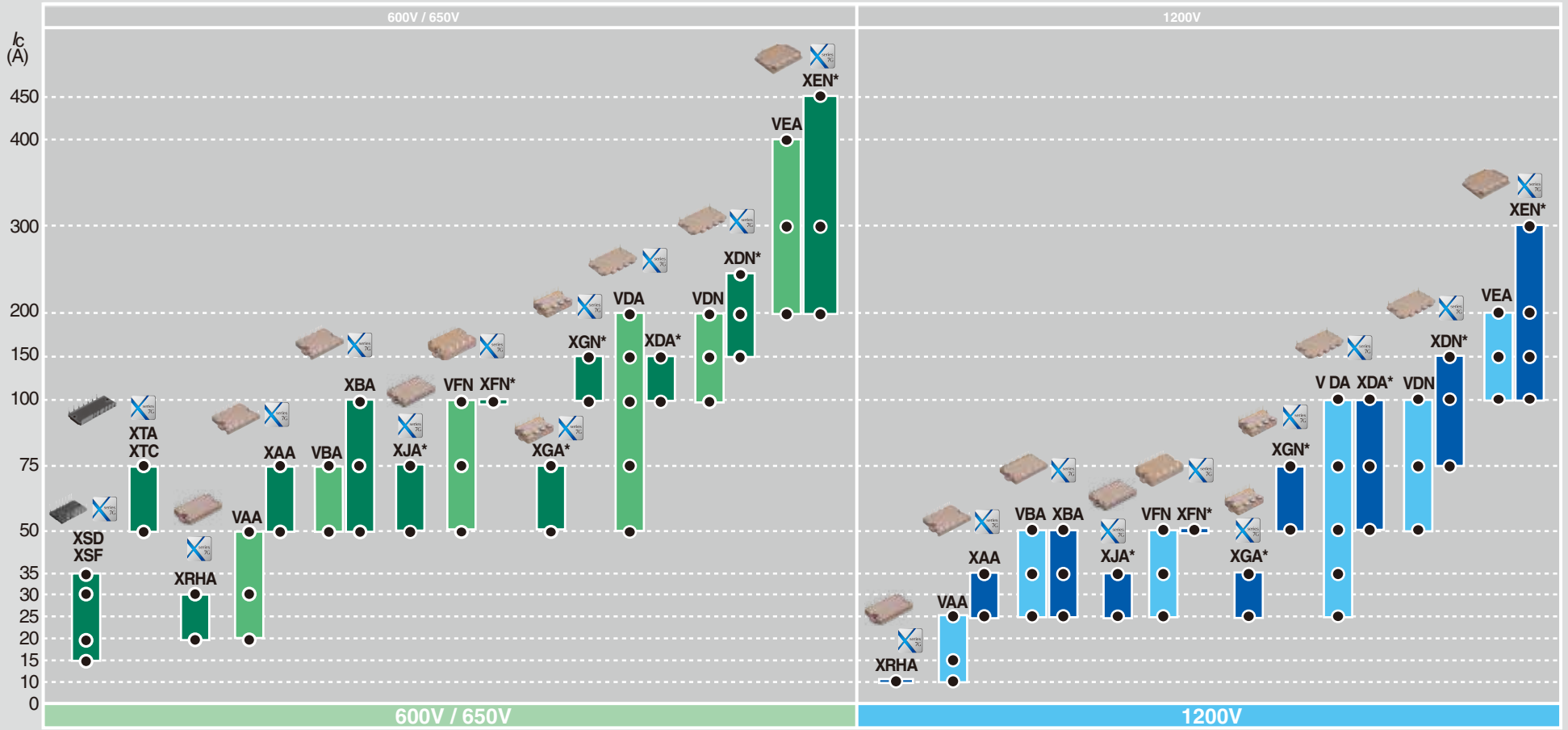
1MBI	Ic	IGBT series & Package type			
		V/U series	Size	Page	
		V	62×108mm	16	Standard Pack
		VC, VR, UG	140×130mm	18	High Power Module
		VD, VS, UE	140×190mm	18	



1-Pack (V series)　1-Pack (V series)　1-Pack (U series)

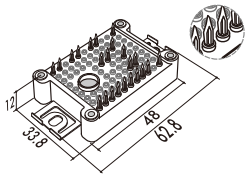
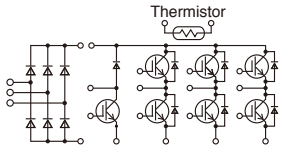
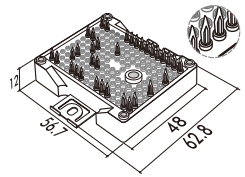
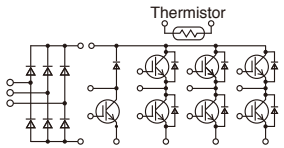
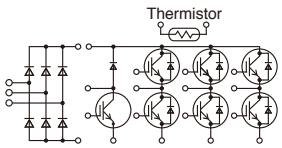
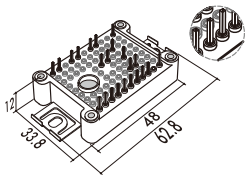
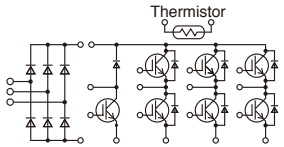
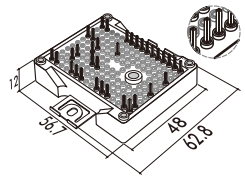
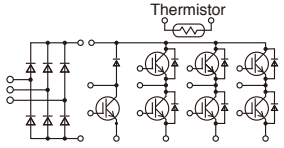
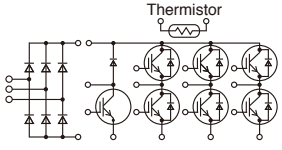
IPM (Intelligent Power Modules) Products Map

6/7MBP	Ic	IGBT series & Package type			V series		X series		
		V series	X series	Size	7 in 1	6 in 1	7 in 1	6 in 1	Page
		–	XSD, XSF	26×43mm	–	–	–	✓	23
		–	XTA, XTC	31×79mm	–	–	–	✓	23
		–	XRHA	36×70mm	–	–	–	✓	24
		VAA	XAA	49.5×70mm	–	✓	–	✓	24
		VBA	XBA	50.2×87mm	–	✓	–	✓	24
		–	XJA	50.2×87mm	–	–	✓	–	24
		VFN	XFN	55×90mm	✓	✓	✓	✓	25
		–	XGA, XGN	55×90mm	–	–	–	✓	25
		VDA, VDN	XDA, XDN	84×128.5mm	✓	✓	✓	✓	26
		VEA	XEN	110×142mm	✓	✓	✓	✓	27



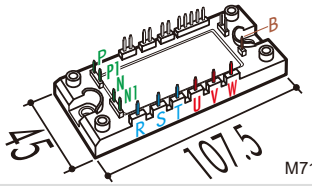
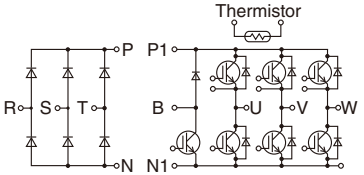
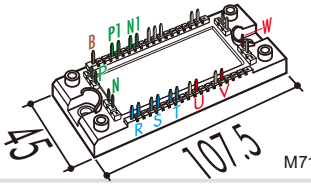
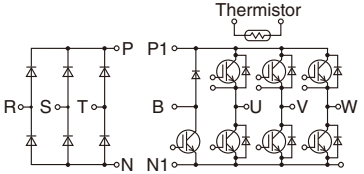
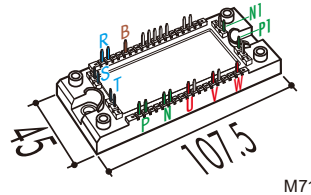
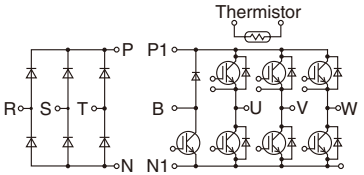
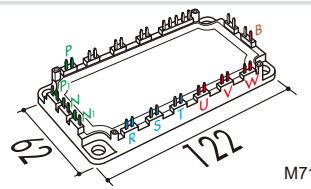
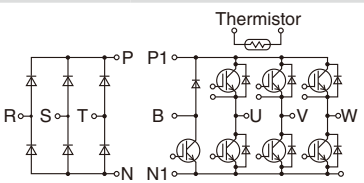
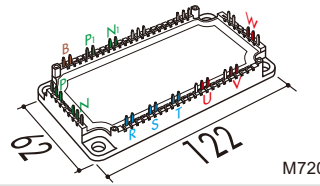
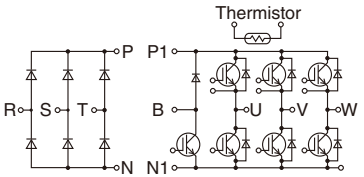
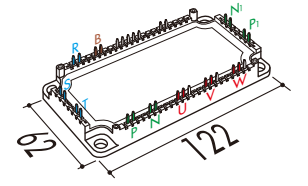
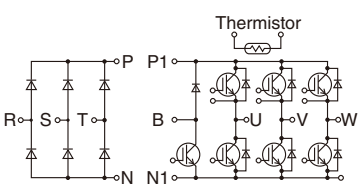
Small PIM (Power Integrated Modules)

Dimension[mm]

		Ic	650V X series	600V V series	1200V X series	1200V V series
With NTC, Press fit pins	 V: M726, X: M730 	10A	7MBR10XKA065-50	7MBR10VKA060-50	7MBR10XKA120-50	7MBR10VKA120-50
		15A	7MBR15XKA065-50	7MBR15VKA060-50	7MBR15XKA120-50	7MBR15VKA120-50
		20A	7MBR20XKA065-50	7MBR20VKA060-50		
		25A			7MBR25XKA120-50	
		30A	7MBR30XKA065-50	7MBR30VKA060-50		
	 V: M727, X: M731  XKB, VKB  XRKB	15A			7MBR15XKB120-50	7MBR15VKB120-50
		25A			7MBR25XKB120-50	7MBR25VKB120-50
		35A			7MBR35XKB120-50	7MBR35VKB120-50
		50A	7MBR50XKB065-50	7MBR50VKB060-50	7MBR50XRKB120-50	
With NTC, Solder pins	 V: M728, X: M732 	10A	7MBR10XKC065-50	7MBR10VKC060-50	7MBR10XKC120-50	7MBR10VKC120-50
		15A	7MBR15XKC065-50	7MBR15VKC060-50	7MBR15XKC120-50	7MBR15VKC120-50
		20A	7MBR20XKC065-50	7MBR20VKC060-50		
		25A			7MBR25XKC120-50	
		30A	7MBR30XKC065-50	7MBR30VKC060-50		
	 V: M729, X: M733  XKD, VKD  XRKD	15A			7MBR15XKD120-50	7MBR15VKD120-50
		25A			7MBR25XKD120-50	7MBR25VKD120-50
		35A			7MBR35XKD120-50	7MBR35VKD120-50
		50A	7MBR50XKD065-50	7MBR50VKD060-50	7MBR50XRKD120-50	

PIM (Power Integrated Modules) EconoPIM™

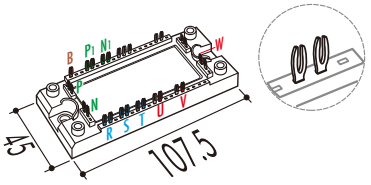
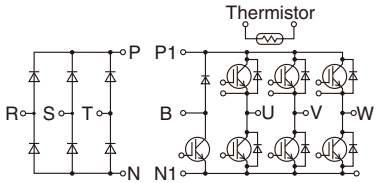
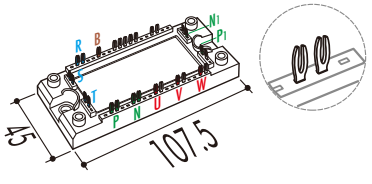
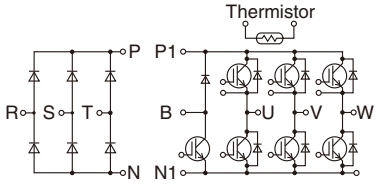
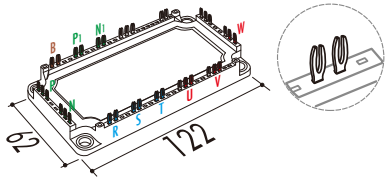
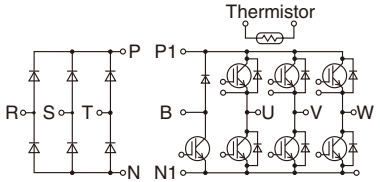
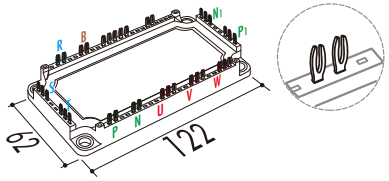
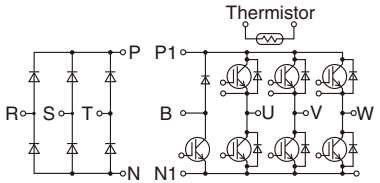
With NTC, Solder pins, PIM

Dimension[mm]	Ic	650V X series	600V V series	1200V X series	1200V V series
 M711 	25A				7MBR25VA120-50
	35A				7MBR35VA120-50
	50A		7MBR50VA060-50		
 M719 	25A				7MBR25VM120-50
	35A			7MBR35XMA120-50	7MBR35VM120-50
	50A	7MBR50XMA065-50		7MBR50XMA120-50	7MBR50VM120-50
	75A	7MBR75XMA065-50		7MBR75XME120-50	
 M719 	25A				7MBR25VP120-50
	35A			7MBR35XPA120-50	7MBR35VP120-50
	50A	7MBR50XPA065-50	7MBR50VP060-50	7MBR50XPA120-50	7MBR50VP120-50
				7MBR50XPE120-50	
	75A	7MBR75XPA065-50	7MBR75VP060-50	7MBR75XPE120-50	
	100A	7MBR100XPE065-50	7MBR100VP060-50		
 M712 	35A				7MBR35VB120-50
	50A				7MBR50VB120-50
	75A		7MBR75VB060-50		7MBR75VB120-50
	100A		7MBR100VB060-50		
 M720 	50A				7MBR50VN120-50
	75A	7MBR75XNA065-50		7MBR75XNA120-50	7MBR75VN120-50
	100A	7MBR100XNA065-50		7MBR100XNA120-50	7MBR100VN120-50
	150A	7MBR150XNA065-50		7MBR150XNE120-50	7MBR150VN120-50
 M720 	50A				7MBR50VR120-50
	75A			7MBR75XRA120-50	7MBR75VR120-50
				7MBR75XRE120-50	
	100A	7MBR100XRA065-50	7MBR100VR060-50	7MBR100XRA120-50	7MBR100VR120-50
				7MBR100XRE120-50	
	150A	7MBR150XRA065-50	7MBR150VR060-50	7MBR150XRE120-50	7MBR150VR120-50
		7MBR150XRE065-50			

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

PIM (Power Integrated Modules) EconoPIM™

With NTC, Press fit pins, PIM

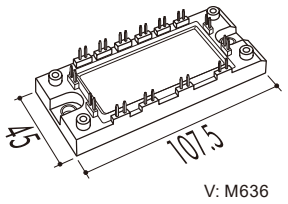
Dimension[mm]	Ic	650V X series	600V V series	1200V X series	1200V V series
 M721 	25A				7MBR25VW120-50
	35A			7MBR35XWA120-50	7MBR35VW120-50
	50A	7MBR50XWA065-50		7MBR50XWA120-50	7MBR50VW120-50
	75A	7MBR75XWA065-50		7MBR75XWE120-50	
 M721 	25A				7MBR25VY120-50
	35A			7MBR35XYA120-50	7MBR35VY120-50
	50A	7MBR50XYA065-50	7MBR50VY060-50	7MBR50XYA120-50	7MBR50VY120-50
	75A	7MBR75XYA065-50	7MBR75VY060-50	7MBR75XYE120-50	
	100A	7MBR100XYE065-50	7MBR100VY060-50		
 M722 	50A				7MBR50VX120-50
					7MBR50VX120-80
	75A	7MBR75XXA065-50		7MBR75XXA120-50	7MBR75VX120-50
					7MBR75VX120-80
	100A	7MBR100XXA065-50		7MBR100XXA120-50	7MBR100VX120-50
					7MBR100VX120-80
	150A	7MBR150XXA065-50		7MBR150XXE120-50	7MBR150VX120-50
					7MBR150VX120-80
 M722 	50A				7MBR50VZ120-50
					7MBR50VZ120-80
	75A			7MBR75XZA120-50	7MBR75VZ120-50
					7MBR75VZ120-80
	100A	7MBR100XZA065-50	7MBR100VZ060-50	7MBR100XZA120-50	7MBR100VZ120-50
			7MBR100VZ060-80		7MBR100VZ120-80
	150A	7MBR150XZA065-50	7MBR150VZ060-50	7MBR150XZE120-50	7MBR150VZ120-50
			7MBR150VZ060-80		7MBR150VZ120-80

Note1: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.
Note2: “-80” : High thermal conductivity TIM (Thermal Interface Material) is pre-applied on a baseplate of “-50” type.

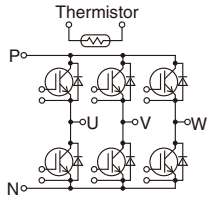
6-Pack EconoPACK™

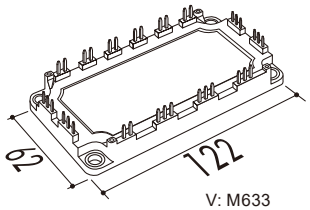
With NTC, Solder pins

Dimension[mm]

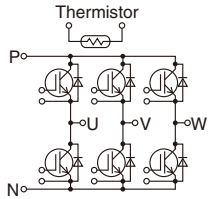


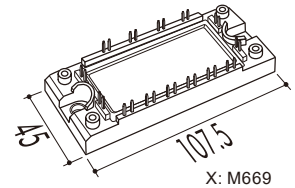
V: M636



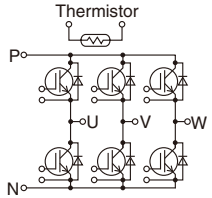


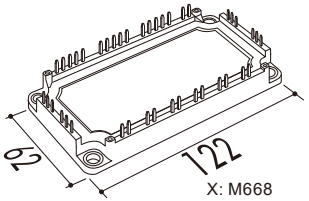
V: M633



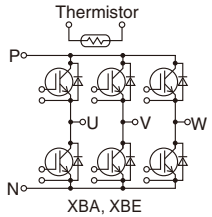


X: M669

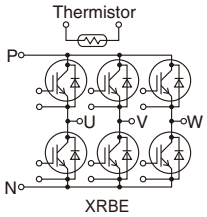




X: M668



XBA, XBE



XRBE

Ic	600V V series	1200V X series	1200V V series
50A	6MBI50VA-060-50		6MBI50VA-120-50
75A	6MBI75VA-060-50		6MBI75VA-120-50
100A	6MBI100VA-060-50		6MBI100VA-120-50
100A			6MBI100VB-120-50
150A	6MBI150VB-060-50		6MBI150VB-120-50
180A			6MBI180VB-120-50
			6MBI180VB-120-55
100A		6MBI100XAE120-50	
100A		6MBI100XBA120-50	
150A		6MBI150XBA120-50	
200A		6MBI200XBA120-50	
		6MBI200XBE120-50	
250A		6MBI250XRBE120-50*	

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

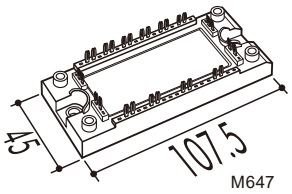
Note2: EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.

*Under development

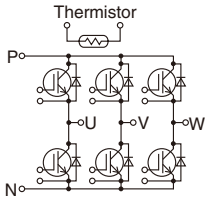
6-Pack EconoPACK™

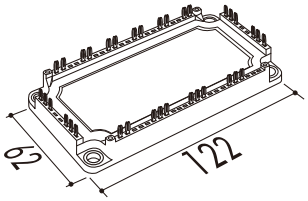
With NTC, Press fit pins

Dimension[mm]

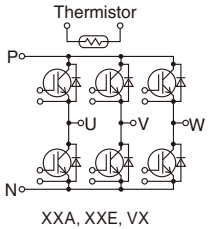


M647

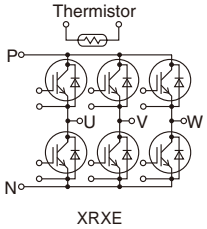




M648



XXA, XXE, VX



XRXE

Ic	600V	1200V		1700V
	V series	X series	V series	V series
50A	6MBI50VW-060-50		6MBI50VW-120-50	
75A	6MBI75VW-060-50		6MBI75VW-120-50	
100A	6MBI100VW-060-50		6MBI100VW-120-50	
100A		6MBI100XXA120-50	6MBI100VX-120-50	6MBI100VX-170-50
			6MBI100VX-120-80	6MBI100VX-170-80
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*		

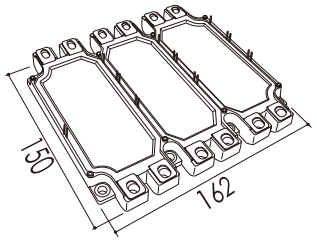
*Under development

Note1: 6MBI180VB-120-55, 6MBI180VX-120-55; Premium type (Low Thermal Impedance Version)
Note2: "-85" :High thermal conductivity TIM (Thermal Interface Material) is pre-applied on a baseplate for "-55" type.
Note3: EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.

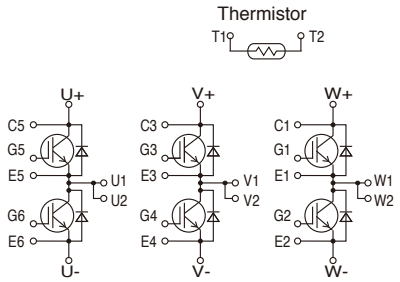
6-Pack EconoPACK™+

With NTC, High power 6-Pack

Dimension[mm]



M629



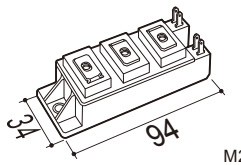
Ic	1200V	1700V
	V series	V series
225A	6MBI225V-120-50	
300A	6MBI300V-120-50	6MBI300V-170-50
	6MBI300V-120-80	
450A	6MBI450V-120-50	6MBI450V-170-50
		6MBI450V-170-80
550A	6MBI550V-120-50	

Note1: EconoPACK™+ is registered trademark of Infineon Technologies AG, Germany.
Note2: "-80" : High thermal conductivity TIM (Thermal Interface Material) is pre-applied on a baseplate of "-50" type.

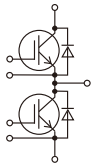
Standard 2-Pack

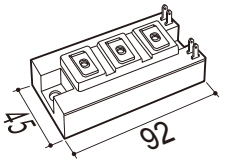
2-Pack

Dimension[mm]

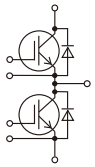


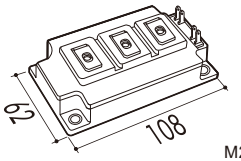
M263



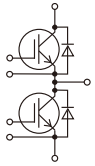


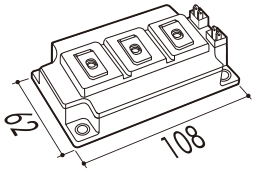
M274



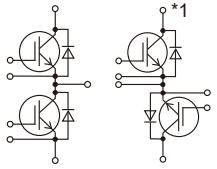


M275

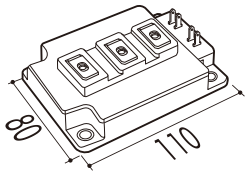




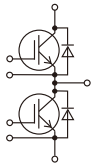
M276



2MBI450VH-120F
Common Emitter



M277

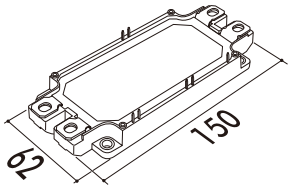
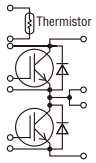
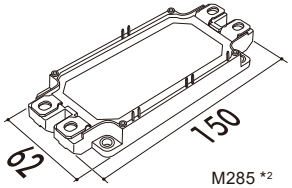
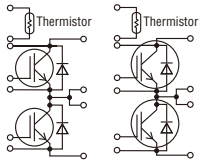
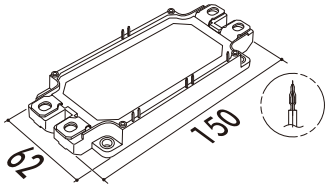
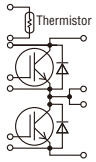
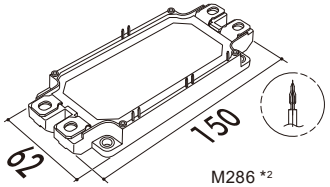
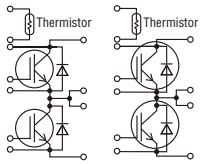


Ic	650V X series	600V V series	1200V X series	1200V V series	1700V X series	1700V V series
75A				2MBI75VA-120-50	2MBI75XAA170-50	2MBI75VA-170-50
100A		2MBI100VA-060-50	2MBI100XAA120-50	2MBI100VA-120-50	2MBI100XAA170-50	2MBI100VA-170-50
150A	2MBI150XAA065-50	2MBI150VA-060-50	2MBI150XAA120-50	2MBI150VA-120-50	2MBI150XAA170-50	
200A	2MBI200XAA065-50	2MBI200VA-060-50	2MBI200XAA120-50			
150A				2MBI150VB-120-50		
200A			2MBI200XBE120-50	2MBI200VB-120-50		
300A	2MBI300XBE065-50	2MBI300VB-060-50	2MBI300XBE120-50			
400A	2MBI400XBE065-50	2MBI400VB-060-50				
300A				2MBI300VD-120-50		
400A	2MBI400XDE065-50	2MBI400VD-060-50	2MBI400XDE120-50	2MBI400VD-120-50		
600A	2MBI600XDE065-50	2MBI600VD-060-50	2MBI600XDE120-50			
150A					2MBI150XHA170-50	2MBI150VH-170-50
						2MBI150VH-170-80
200A				2MBI200VH-120-50	2MBI200XHA170-50	2MBI200VH-170-50
				2MBI200VH-120-80		2MBI200VH-170-80
300A			2MBI300XHA120-50	2MBI300VH-120-50	2MBI300XHA170-50	2MBI300VH-170-50
				2MBI300VH-120-80		2MBI300VH-170-80
400A					2MBI400XHA170-50	
450A			2MBI450XHA120-50	2MBI450VH-120-50		
				2MBI450VH-120-80		
				2MBI450VH-120F-50*1		
				2MBI450VH-120F-80*1		
600A			2MBI600XHA120-50			
300A				2MBI300VE-120-50	2MBI300XEE170-50	2MBI300VE-170-50
				2MBI300VE-120-80		2MBI300VE-170-80
400A					2MBI400XEE170-50	2MBI400VE-170-50
						2MBI400VE-170-80
450A			2MBI450XEE120-50	2MBI450VE-120-50		
				2MBI450VE-120-80		
600A	2MBI600XEE065-50	2MBI600VE-060-50	2MBI600XEE120-50	2MBI600VE-120-50		
		2MBI600VE-060-80		2MBI600VE-120-80		

Note: “-80” : High thermal conductivity TIM (Thermal Interface Material) is pre-applied on a baseplate of “-50” type.

Standard 2-Pack

Dimension[mm]

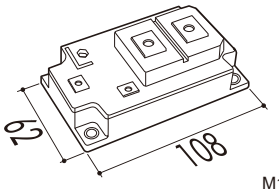
		Ic	1200V			1700V		
			X series	V series	V series With SiN substrate *1	X series	V series	V series With SiN substrate *1
With NTC, Solder pins	 M254 	225A	2MBI225XNA120-50	2MBI225VN-120-50	2MBI225VN-120S-50	2MBI225XNA170-50		
				2MBI225VN-120-80				
		300A	2MBI300XNA120-50	2MBI300VN-120-50	2MBI300VN-120S-50	2MBI300XNA170-50	2MBI300VN-170-50	
				2MBI300VN-120-80	2MBI300VN-120S-80		2MBI300VN-170-80	
		450A	2MBI450XNA120-50	2MBI450VN-120-50	2MBI450VN-120S-50	2MBI450XNA170-50	2MBI450VN-170-50	
				2MBI450VN-120-80	2MBI450VN-120S-80		2MBI450VN-170-80	
		550A						2MBI550VN-170-50
								2MBI550VN-170-80
		600A	2MBI600XNG120-50		2MBI600VN-120-50	2MBI600XNG170-50		
					2MBI600VN-120-80			
	 M285 *2  XNE XRNE	600A	2MBI600XNE120-50			2MBI600XNE170-50		
		800A	2MBI800XNE120-50					
		1000A	2MBI1000XRNE120-50					
With NTC, Press fit pins	 M282 	225A	2MBI225XNB120-50	2MBI225VX-120-50		2MBI225XNB170-50	2MBI225VX-170-50	
				2MBI225VX-120-80			2MBI225VX-170-80	
		300A	2MBI300XNB120-50	2MBI300VX-120-50		2MBI300XNB170-50	2MBI300VX-170-50	
				2MBI300VX-120-80			2MBI300VX-170-80	
		450A	2MBI450XNB120-50	2MBI450VX-120-50		2MBI450XNB170-50	2MBI450VX-170-50	
				2MBI450VX-120-80			2MBI450VX-170-80	
		550A						2MBI550VX-170-50
								2MBI550VX-170-80
		600A	2MBI600XNH120-50		2MBI600VX-120-50	2MBI600XNH170-50		
					2MBI600VX-120-80			
	 M286 *2  XNF XRNF	600A	2MBI600XNF120-50			2MBI600XNF170-50		
		800A	2MBI800XNF120-50					
		1000A	2MBI1000XRNF120-50					

Note: “-80” : High thermal conductivity TIM (Thermal Interface Material) is pre-applied on a baseplate of “-50” type.

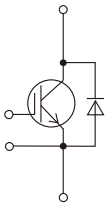
*1 Low thermal impedance version
*2 Low thermal impedance and high tracking capability type

Standard 1-Pack

Dimension[mm]



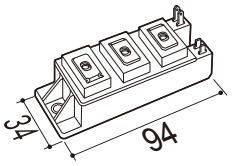
M153



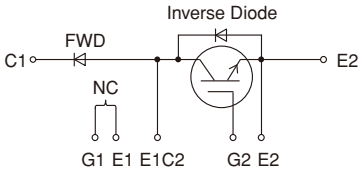
Ic	1200V V series	1200V V series with AlN substrate	1700V V series
300A			1MBI300V-170-50
400A	1MBI400V-120-50	1MBI400VF-120-50	1MBI400V-170-50
600A	1MBI600V-120-50	1MBI600VF-120-50	1MBI600V-170-50
900A	1MBI900V-120-50		

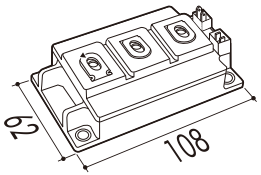
Chopper

Dimension[mm]

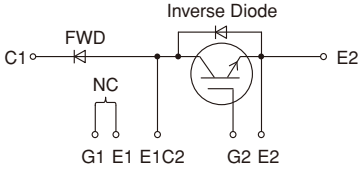


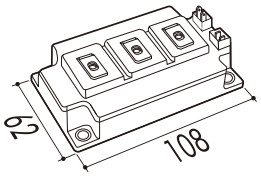
M262



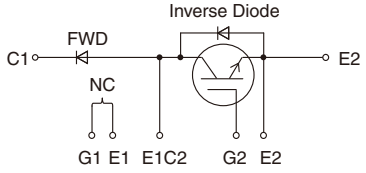


M259



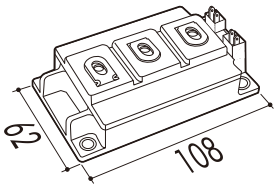
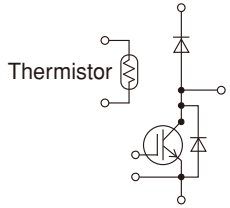
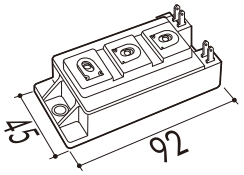
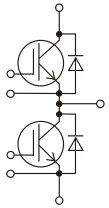
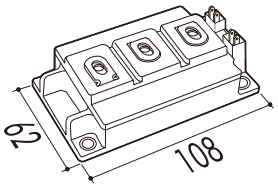
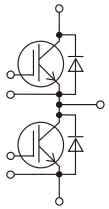
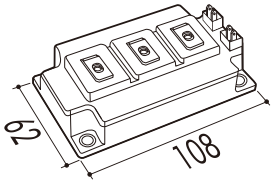
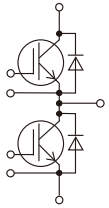


M283

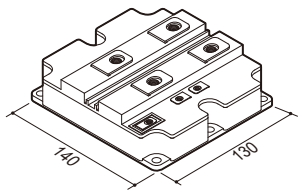
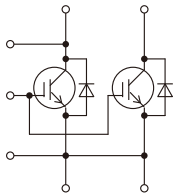
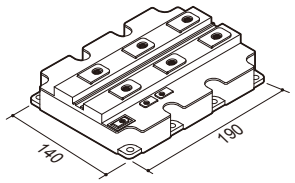
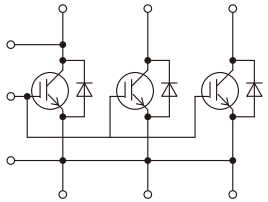
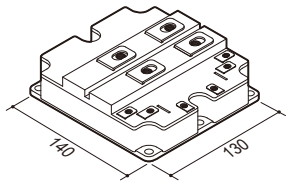
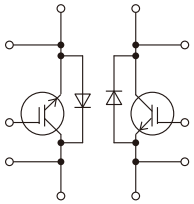


Ic	600V U series	600V V series	1200V U series	1200V V series
50A			1MBI50U4F-120L-50	
75A			1MBI75U4F-120L-50	
100A			1MBI100U4F-120L-50	
150A				1MBI150VA-120L-50
200A				1MBI200VA-120L-50
200A			1MBI200U4H-120L-50	
300A	1MBI300U2H-060L-50			
400A		1MBI400VH-060L-50		

High Speed Modules

		Dimension[mm]	Ic	1200V High Speed IGBT
Chopper	 M249		**200A**	1MBI200HH-120L-50
			300A	1MBI300HH-120L-50
			400A	1MBI400HH-120L-50
2-Pack	 M233		**100A**	2MBI100HB-120-50
	 M249		**150A**	2MBI150HH-120-50
			200A	2MBI200HH-120-50
	 M276		**100A**	2MBI100HJ-120-50
			150A	2MBI150HJ-120-50
			200A	2MBI200HJ-120-50
			300A	2MBI300HJ-120-50

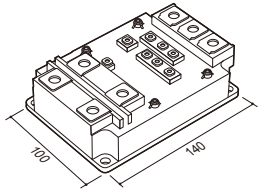
High Power Modules

		Dimension[mm]	*Ic*	1200V	1700V		3300V	
				V series Trench-FS	V series Trench-FS		U series Trench-FS	
				Cu-baseplate	Cu-baseplate	AlSiC-baseplate	AlSiC-baseplate	AlSiC-baseplate Low switching loss
1-Pack	 M151, M155		800A				1MBI800UG-330	
			1000A				1MBI1000UG-330	1MBI1000UG-330B
			1200A	1MBI1200VC-120P	1MBI1200VC-170E	1MBI1200VR-170E		
			1600A	1MBI1600VC-120P	1MBI1600VC-170E	1MBI1600VR-170E		
			2400A	1MBI2400VC-120P	1MBI2400VC-170E	1MBI2400VR-170E		
	 M152, M156		1200A				1MBI1200UE-330	
			1500A				1MBI1500UE-330	1MBI1500UE-330B
			2400A	1MBI2400VD-120P	1MBI2400VD-170E	1MBI2400VS-170E		
			3600A	1MBI3600VD-120P	1MBI3600VD-170E	1MBI3600VS-170E		
2-Pack	 M256,M278		600A	2MBI600VG-120P	2MBI600VG-170E	2MBI600VT-170E		
			800A	2MBI800VG-120P	2MBI800VG-170E	2MBI800VT-170E		
			1200A	2MBI1200VG-120P	2MBI1200VG-170E	2MBI1200VT-170E		

Note: M151, M152, M256: Cu-baseplate M155, M156, M278: AlSiC-baseplate

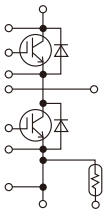
High Power Modules

2-Pack HPnC



M292

Dimension[mm]



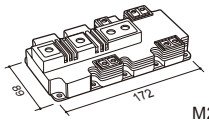
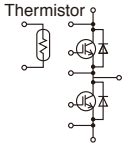
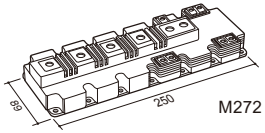
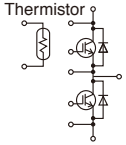
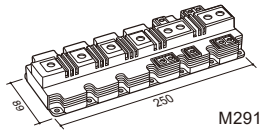
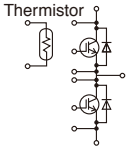
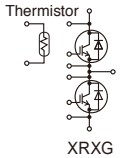
Thermistor

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

*Under development

PrimePACK™

2-Pack

Dimension[mm]	Ic	1200V X series	1200V V series Low switching loss	1200V V series Soft turn off	1700V X series Low switching loss	1700V V series Low switching loss	1700V V series Soft turn off
 M271  Thermistor	600A		2MBI600VXA-120E-50				
			2MBI600VXA-120E-80				
			2MBI600VXA-120E-54				
	650A				2MBI650XXA170-50*	2MBI650VXA-170E-50	
						2MBI650VXA-170E-80	
						2MBI650VXA-170E-54	
						2MBI650VXA-170EA-50	
						2MBI650VXA-170EA-80	
						2MBI650VXA-170EA-54	
	900A	2MBI900XXA120P-50*	2MBI900VXA-120E-50	2MBI900VXA-120P-50			
			2MBI900VXA-120E-80	2MBI900VXA-120P-80			
			2MBI900VXA-120E-54	2MBI900VXA-120P-54			
	1200A	2MBI1200XXE120P-50			2MBI1200XXE170-50		
 M272  Thermistor	1000A				2MBI1000XXB170-50	2MBI1000VXB-170E-50	
						2MBI1000VXB-170E-80	
						2MBI1000VXB-170E-54	
						2MBI1000VXB-170EA-50	
						2MBI1000VXB-170EA-80	
						2MBI1000VXB-170EA-54	
	1400A	2MBI1400XXB120P-50	2MBI1400VXB-120E-50	2MBI1400VXB-120P-50	2MBI1400XXB170-50	2MBI1400VXB-170E-50	2MBI1400VXB-170P-50
			2MBI1400VXB-120E-80	2MBI1400VXB-120P-80		2MBI1400VXB-170E-80	2MBI1400VXB-170P-80
			2MBI1400VXB-120E-54	2MBI1400VXB-120P-54		2MBI1400VXB-170E-54	2MBI1400VXB-170P-54
	1800A	2MBI1800XXF120P-50			2MBI1800XXF170-50		
 M291  Thermistor XXG  Thermistor XRXG	1800A				2MBI1800XXG170-50		
	2400A	2MBI2400XRXG120-50*					

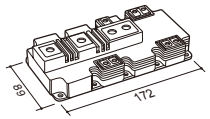
Note1: The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.
Note2: "-80" : High thermal conductivity TIM (Thermal Interface Material) is pre-applied on a baseplate for "-54" type.
Note3: The products with 'EA' on this page have large FWD.
Note4: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
Note5: The products with 'P' on this page are 'soft turn off' type

*Under development

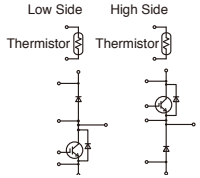
PrimePACK™

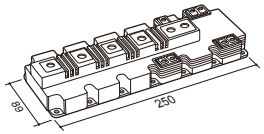
Chopper

Dimension[mm]

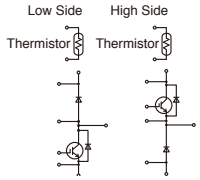


M271





M272

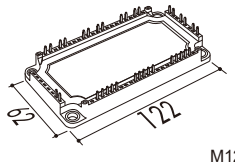
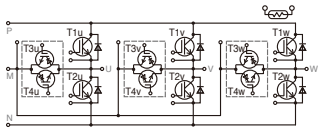
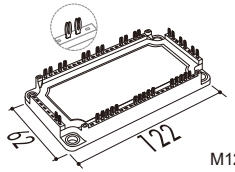
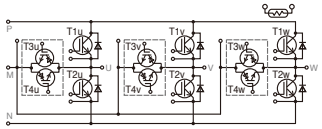
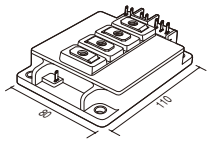
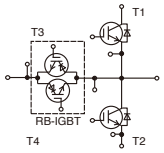
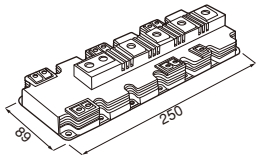
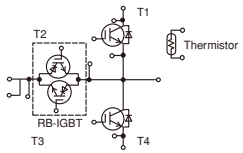


Ic	1200V		1700V	
	V series		V series	
	Low side configuration	High side configuration	Low side configuration	High side configuration
650A			1MBI650VXA-170EL-50	1MBI650VXA-170EH-50
			1MBI650VXA-170EL-80	1MBI650VXA-170EH-80
			1MBI650VXA-170EL-54	1MBI650VXA-170EH-54
900A	1MBI900VXA-120PD-50 *1	1MBI900VXA-120PC-50 *1		
	1MBI900VXA-120PD-54 *1	1MBI900VXA-120PC-54 *1		
	1MBI900VXA-120PD-80 *1	1MBI900VXA-120PC-80 *1		
1000A			1MBI1000VXB-170EL-50	1MBI1000VXB-170EH-50
			1MBI1000VXB-170EL-80	1MBI1000VXB-170EH-80
			1MBI1000VXB-170EL-54	1MBI1000VXB-170EH-54
1400A			1MBI1400VXB-170PL-50	1MBI1400VXB-170PH-50
	1MBI1400VXB-120PL-54	1MBI1400VXB-120PH-54	1MBI1400VXB-170PL-54	1MBI1400VXB-170PH-54
	1MBI1400VXB-120PL-80	1MBI1400VXB-120PH-80	1MBI1400VXB-170PL-80	1MBI1400VXB-170PH-80

Note1: The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.
Note2: "-80" : High thermal conductivity TIM (Thermal Interface Material) is pre-applied on a baseplate for "-54" type.
Note3: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
*1 Antiparallel diode current rating is 120A. Application circuit is Boost/Buck chopper only.

Advanced T-type NPC 3-level Modules

Dimension[mm]

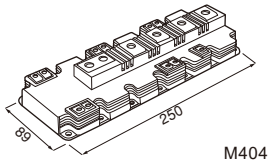
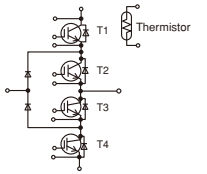
		Ic	600V		1200V		1700V	
			V series	RB-IGBT	V series	RB-IGBT	V series	RB-IGBT
3 Phase With NTC, Solder pins	 M1203 	50A			12MBI50VN-120-50	600V		
		75A			12MBI75VN-120-50	600V		
		100A			12MBI100VN-120-50	600V		
3 Phase With NTC, Press fit pins	 M1202 	50A			12MBI50VX-120-50	600V		
		75A			12MBI75VX-120-50	600V		
		100A			12MBI100VX-120-50	600V		
1 Phase	 M403 	220A					4MBI220VG-170R2-50	1200V
		300A			4MBI300VG-120R-50	600V		
					4MBI300VG-120R1-50	900V		
		340A			4MBI340VF-120R-50	600V		
		400A	4MBI400VG-060R-50	600V	4MBI400VF-120R-50*1	600V		
1 Phase	 M404 	450A			4MBI450VB-120R1-50	900V	4MBI450VB-170R2-50	1200V
					4MBI450VB-120R1-60	900V	4MBI450VB-170R2-60	1200V
		600A					4MBI600VB-170R2-50	1200V
							4MBI600VB-170R2-60	1200V
		650A			4MBI650VB-120R1-50	900V		
					4MBI650VB-120R1-60	900V		
		900A			4MBI900VB-120R1-50	900V		
					4MBI900VB-120R1-60	900V		
					4MBI900VB-120RA-50	600V		
					4MBI900VB-120RA-60	600V		

Note: AT-NPC (Advanced T-type Neutral-Point-Clamped) 3-level Module integrates RB-IGBT (Reverse Blocking-IGBT) in addition to ordinary IGBT and FWD in single package.

*1 Particular for Inverter of UPS or PCS

I-type NPC 3-level Module

Dimension[mm]

		Ic	600V	1200V	1700V
			V series	V series	V series
1 Phase	 M404 	600A		4MBI600VC-120-50	
				4MBI600VC-120-60	

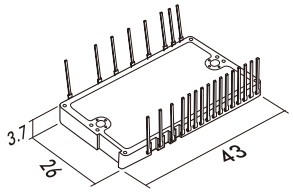
Small IPM (Intelligent Power Modules)

Built-in protection functions

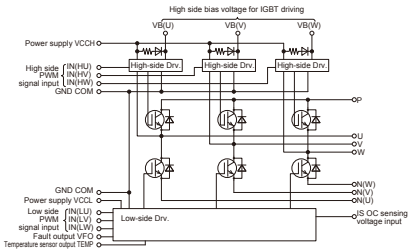
- P-side fault status output (Alarm)
- N-side fault status output (Alarm)
- Under voltage protection (self shutdown)
- Over current protection (self shutdown)
- Overheating protection (self shutdown)
- Temperature sensor output (Vtemp, out)

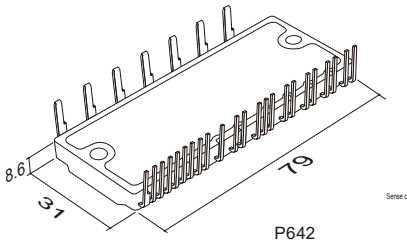
Dimension[mm]

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

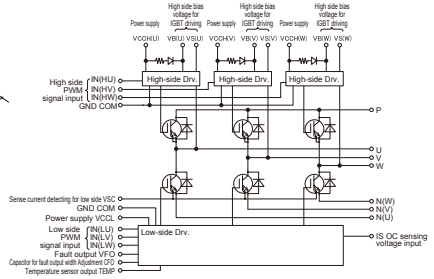


P633A





P642



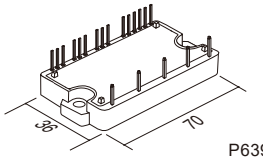
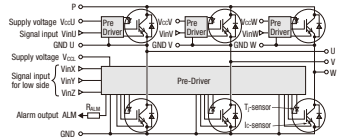
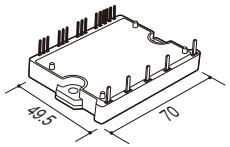
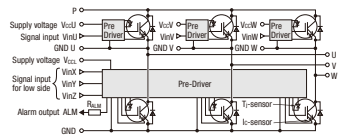
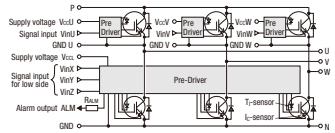
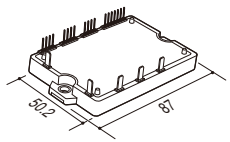
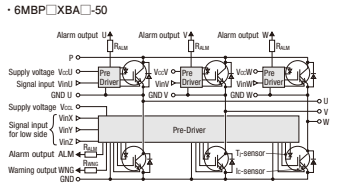
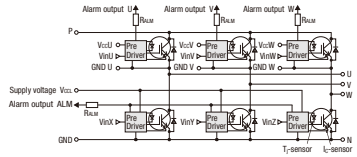
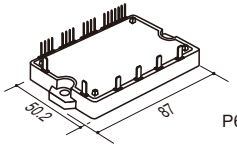
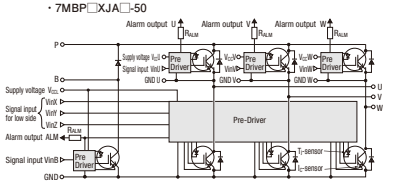
P-side fault status output (Alarm)	N-side fault status output (Alarm)	Under voltage protection (self shutdown)	Over current protection (self shutdown)	Overheating protection (self shutdown)	Temperature sensor output (Vtemp, out)	Ic	600 / 650V X series
✓	–	✓	✓	✓	–	15A	6MBP15XSD060-50
						20A	6MBP20XSD060-50
						30A	6MBP30XSD060-50
						35A	6MBP35XSD060-50
✓	✓	✓	✓	✓	–	15A	6MBP15XSF060-50
						20A	6MBP20XSF060-50
						30A	6MBP30XSF060-50
						35A	6MBP35XSF060-50
✓	–	✓	✓	✓	–	50A	6MBP50XTA065-50
						75A	6MBP75XTA065-50
✓	✓	✓	✓	✓	–	50A	6MBP50XTC065-50
						75A	6MBP75XTC065-50

IPM (Intelligent Power Modules)

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)

Dimension[mm]

							Ic	650V X series	600V V series	1200V X series	1200V V series
Without Brake-Chopper	 P639		✓	✓	✓	✓	–	10A			6MBP10XRHA120-50	
								20A	6MBP20XRHA065-50			
								30A	6MBP30XRHA065-50			
	 P629	・6MBP□XAA□-50  ・6MBP□VAA□-50 	✓	✓	✓	✓	–	10A				6MBP10VAA120-50
								15A				6MBP15VAA120-50
								20A		6MBP20VAA060-50		
								25A			6MBP25XAA120-50	6MBP25VAA120-50
								30A		6MBP30VAA060-50		
								35A			6MBP35XAA120-50	
								50A	6MBP50XAA065-50	6MBP50VAA060-50		
								75A	6MBP75XAA065-50			
	 P626	・6MBP□XBA□-50  ・6MBP□VBA□-50 	✓	✓	✓	✓	✓	25A			6MBP25XBA120-50	6MBP25VBA120-50
								35A			6MBP35XBA120-50	6MBP35VBA120-50
								50A	6MBP50XBA065-50	6MBP50VBA060-50	6MBP50XBA120-50	6MBP50VBA120-50
								75A	6MBP75XBA065-50	6MBP75VBA060-50		
								100A	6MBP100XBA065-50			
With Brake-Chopper	 P644	・7MBP□XJA□-50 	✓	✓	✓	✓	✓	25A			7MBP25XJA120-50*	
								35A			7MBP35XJA120-50*	
								50A	7MBP50XJA065-50*			
								75A	7MBP75XJA065-50*			

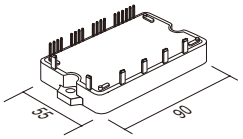
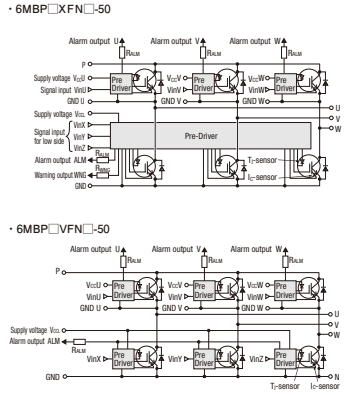
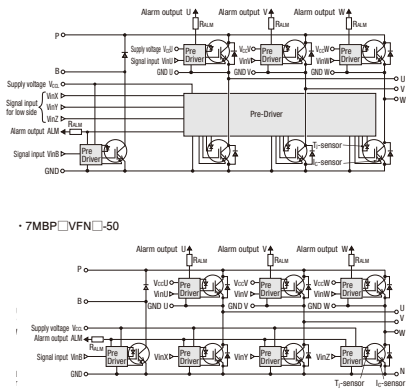
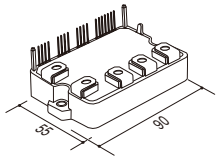
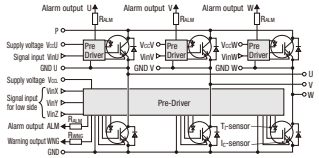
*Under development

IPM (Intelligent Power Modules)

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)

Dimension[mm]

								650V X series	600V V series	1200V X series	1200V V series
Without Brake-Chopper	 P636	・6MBP□XFN□-50 ・6MBP□VFN□-50 	✓	✓	✓	✓	✓	25A				6MBP25VFN120-50
								35A				6MBP35VFN120-50
								50A		6MBP50VFN060-50	6MBP50XFN120-50*	6MBP50VFN120-50
								75A		6MBP75VFN060-50		
								100A	6MBP100XFN065-50*	6MBP100VFN060-50		
With Brake-Chopper		・7MBP□XFN□-50 ・7MBP□VFN□-50 	✓	✓	✓	✓	✓	25A				7MBP25VFN120-50
								35A				7MBP35VFN120-50
								50A		7MBP50VFN060-50	7MBP50XFN120-50*	7MBP50VFN120-50
								75A		7MBP75VFN060-50		
								100A	7MBP100XFN065-50*	7MBP100VFN060-50		
Without Brake-Chopper	 P638		✓	✓	✓	✓	✓	25A			6MBP25XGA120-50*	
								35A			6MBP35XGA120-50*	
								50A	6MBP50XGA065-50*		6MBP50XGN120-50*	
								75A	6MBP75XGA065-50*		6MBP75XGN120-50*	
								100A	6MBP100XGN065-50*			
								150A	6MBP150XGN065-50*			

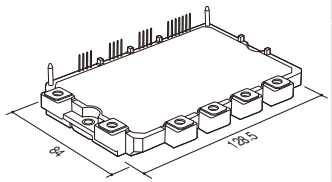
*Under development

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)

IPM (Intelligent Power Modules)

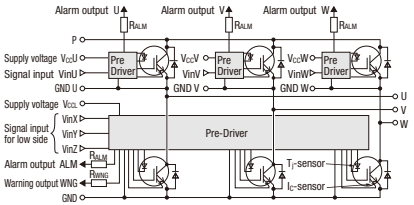
Dimension[mm]



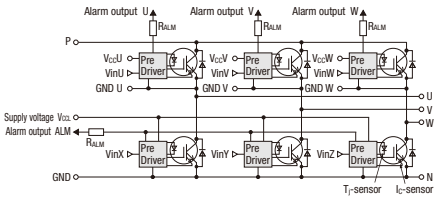
P630

Without Brake-Chopper

- 6MBP□XDA□-50
- 6MBP□XDN□-50



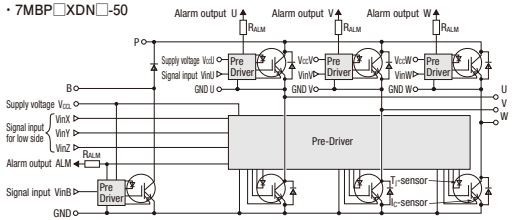
- 6MBP□VDA□-50
- 6MBP□VDN□-50



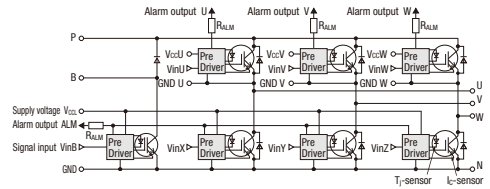
	650V X series	600V V series	1200V X series	1200V V series
25A				6MBP25VDA120-50
35A				6MBP35VDA120-50
50A		6MBP50VDA060-50	6MBP50XDA120-50*	6MBP50VDA120-50
				6MBP50VDN120-50
75A		6MBP75VDA060-50	6MBP75XDA120-50*	6MBP75VDA120-50
			6MBP75XDN120-50*	6MBP75VDN120-50
100A	6MBP100XDA065-50*	6MBP100VDA060-50	6MBP100XDA120-50*	6MBP100VDA120-50
		6MBP100VDN060-50	6MBP100XDN120-50*	6MBP100VDN120-50
150A	6MBP150XDA065-50*	6MBP150VDA060-50		
	6MBP150XDN065-50*	6MBP150VDN060-50	6MBP150XDN120-50*	
200A		6MBP200VDA060-50		
	6MBP200XDN065-50*	6MBP200VDN060-50		
250A				
	6MBP250XDN065-50*			

With Brake-Chopper

- 7MBP□XDA□-50
- 7MBP□XDN□-50



- 7MBP□VDA□-50
- 7MBP□VDN□-50



	650V X series	600V V series	1200V X series	1200V V series
25A				7MBP25VDA120-50
35A				7MBP35VDA120-50
50A		7MBP50VDA060-50	7MBP50XDA120-50*	7MBP50VDA120-50
				7MBP50VDN120-50
75A		7MBP75VDA060-50	7MBP75XDA120-50*	7MBP75VDA120-50
			7MBP75XDN120-50*	7MBP75VDN120-50
100A	7MBP100XDA065-50*	7MBP100VDA060-50	7MBP100XDA120-50*	7MBP100VDA120-50
		7MBP100VDN060-50	7MBP100XDN120-50*	7MBP100VDN120-50
150A	7MBP150XDA065-50*	7MBP150VDA060-50		
	7MBP150XDN065-50*	7MBP150VDN060-50	7MBP150XDN120-50*	
200A		7MBP200VDA060-50		
	7MBP200XDN065-50*	7MBP200VDN060-50		
250A				
	7MBP250XDN065-50*			

Note: The products with 'VDN,XDN' on this page have Low Thermal Impedance Version.

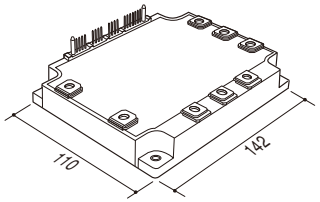
*Under development

IPM (Intelligent Power Modules)

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)

Dimension[mm]



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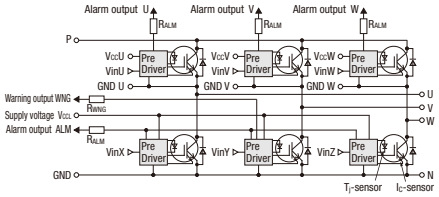
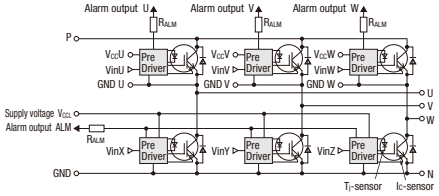
Without Brake-Chopper

- 6MBP□XEN□-50

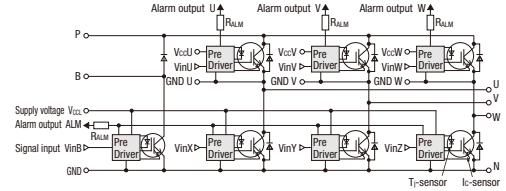


- 6MBP□VEA□-50

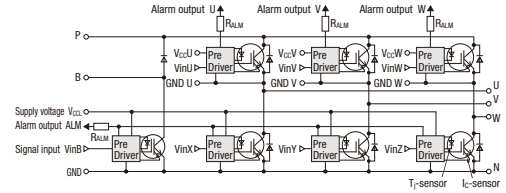


With Brake-Chopper

- 7MBP□XEN□-50



- 7MBP□VEA□-50

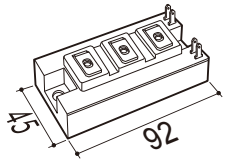
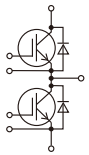
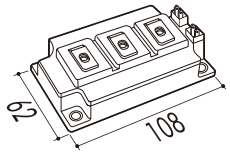
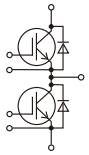
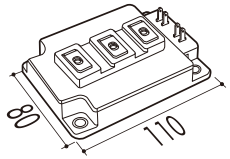
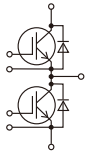
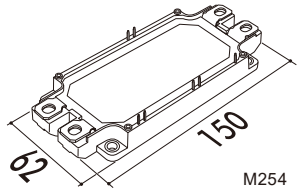
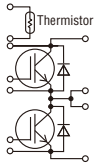


						Ic	650V X series	600V V series	1200V X series	1200V V series
						100A			6MBP100XEN120-50*	6MBP100VEA120-50
						150A			6MBP150XEN120-50*	6MBP150VEA120-50
						200A	6MBP200XEN065-50*	6MBP200VEA060-50	6MBP200XEN120-50*	6MBP200VEA120-50
						300A	6MBP300XEN065-50*	6MBP300VEA060-50	6MBP300XEN120-50*	
						400A		6MBP400VEA060-50		
						450A	6MBP450XEN065-50*			
✓	✓	✓	✓	✓						
						100A			7MBP100XEN120-50*	7MBP100VEA120-50
						150A			7MBP150XEN120-50*	7MBP150VEA120-50
						200A	7MBP200XEN065-50*	7MBP200VEA060-50	7MBP200XEN120-50*	7MBP200VEA120-50
						300A	7MBP300XEN065-50*	7MBP300VEA060-50	7MBP300XEN120-50*	
						400A		7MBP400VEA060-50		
						450A	7MBP450XEN065-50*			
✓	✓	✓	✓	✓						

*Under development

Hybrid SiC Modules

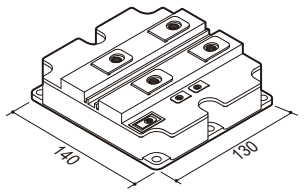
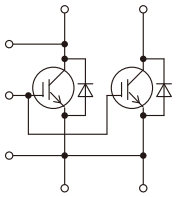
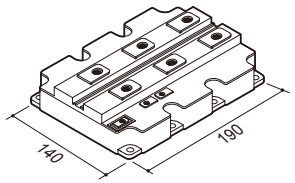
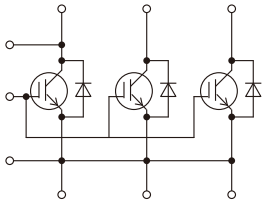
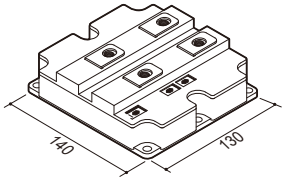
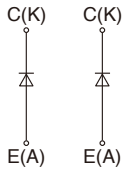
2-Pack

Dimension[mm]	Ic	600V V series	1200V V series	1200V VW series	1700V V 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		

*Under development

Hybrid SiC Modules

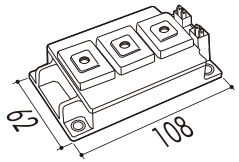
Dimension[mm]

			Ic	3300V X series	3300V SiC-SBD series
1-Pack	 M155		1200A	1MSI1200XAGF330-03*	
	 M156		1800A	1MSI1800XAEF330-03*	
Diode	 M289		900A		2SI900AGF330-03*

*Under development

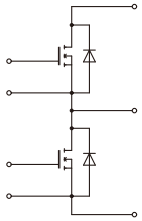
All-SiC Modules

2-Pack



M295

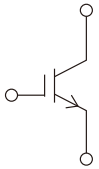
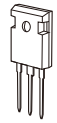
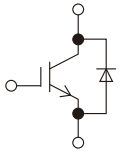
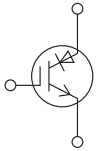
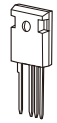
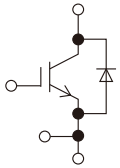
Dimension[mm]



Ic	1200V	1700V
	2G SiC-MOSFET Modules with 1G SiC-SBD	
200A		2SCI200DAHE170-50*
300A	2SCI300DAHE120-50*	2SCI300DAHE170-50*
400A		2SCI400DAHE170-50*
450A	2SCI450DAHE120-50*	
600A	2SCI600DAHE120-50*	

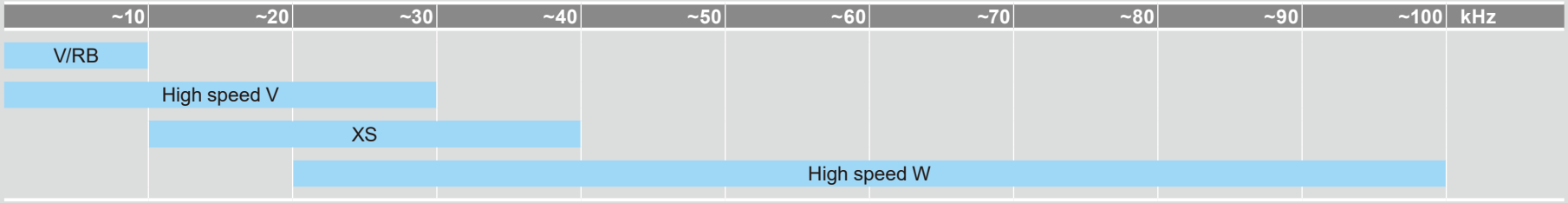
*Under development

Discrete IGBT

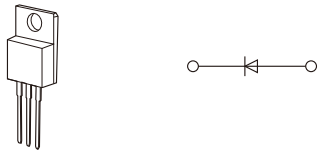
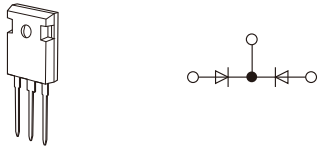
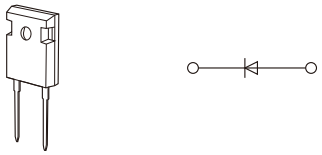
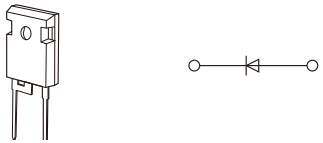
		Ic	600V			650V		1200V			
			High speed V series	V series	RB series	XS series	High speed W series	XS series	High speed W series	High speed V series	V series
TO-247 (Type:B)		15A								FGW15N120H	
		25A							FGW25N120W		
		30A				FGW30XS65	FGW30N65W			FGW30N120H	
		35A	FGW35N60H								
		40A				FGW40XS65	FGW40N65W	FGW40XS120	FGW40N120W	FGW40N120H	
		50A	FGW50N60H			FGW50XS65	FGW50N65W				
		60A					FGW60N65W				
		75A	FGW75N60H			FGW75XS65	FGW75N65W	FGW75XS120			
		15A								FGW15N120HD	FGW15N120VD
		25A							FGW25N120WD		FGW25N120VD
									FGW25N120WE		
		30A		FGW30N60VD		FGW30XS65C				FGW30N120HD	
		35A	FGW35N60HD								
			FGW35N60HC								
		40A				FGW40XS65C	FGW40N65WD	FGW40XS120C	FGW40N120WD	FGW40N120HD	FGW40N120VD
							FGW40N65WE		FGW40N120WE		
		50A	FGW50N60HD	FGW50N60VD		FGW50XS65D	FGW50N65WD				
			FGW50N60HC			FGW50XS65C	FGW50N65WE				
		60A					FGW60N65WD				
							FGW60N65WE				
		75A	FGW75N60HD			FGW75XS65D	FGW75N65WE	FGW75XS120C			
			FGW75N60HC			FGW75XS65C					
	 RB-IGBT	85A			FGW85N60RB						
TO-247-4		40A							FGZ40N120WE		
		50A					FGZ50N65WD				
							FGZ50N65WE				
		75A				FGZ75XS65C	FGZ75N65WE	FGZ75XS120C*			

*Under development

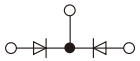
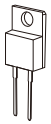
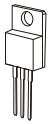
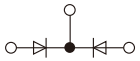
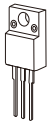
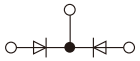
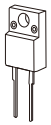
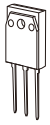
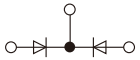
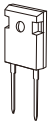
Recommended operating frequency



Rectifier Diode

	I_F	600V		650V	1200V	
		Ultra Fast Recovery Diodes			Soft Recovery Fast Recovery Diodes	
TO-220 	15A	FDRP15S60L				
	25A	FDRP25S60L				
TO-247 (Type:B) 	40A					FDRW40C120J
	50A		FDRW50C60L			
	60A					FDRW60C120J
	70A		FDRW70C60L			
TO-247 (Type:A) 	60A			FDRW60T65L		
	75A	FDRW75T60L				
TO-247-2 (Type:B) 	12A				FDRW12S120J	
	15A	FDRW15S60L				
	20A				FDRW20S120J	
	25A	FDRW25S60L				
	30A				FDRW30S120J	
	35A	FDRW35S60L				

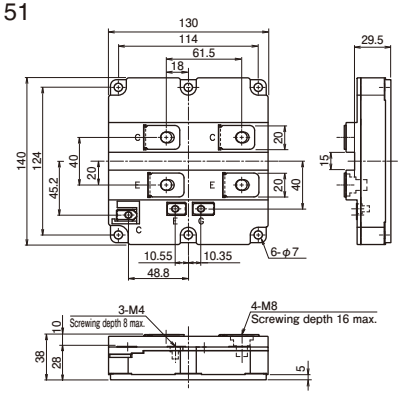
SiC-SBD

		I_F	650V		1200V	
			SiC-SBD 2G	SiC-SBD 1G	SiC-SBD 2G	SiC-SBD 1G
T-Pack(s)		10A		FDCC10S65		
		20A				
		25A		FDCC25S65		
		20A		FDCC20C65		
TO-220-2	 	6A	FDC2PT06S65*			
		8A	FDC2PT08S65*			
		10A	FDC2PT10S65*	FDCP10S65		
		25A		FDCP25S65		
TO-220	 	20A		FDCP20C65		
TO-220F	 	20A		FDCA20C65		
TO-220F-2	 	6A	FDC2AT06S65*			
		8A	FDC2AT08S65*			
		10A	FDC2AT10S65*	FDCA10S65		
		18A				FDCA18S120
		25A		FDCA25S65		
TO-247 (Type:A)	  	10A		FDCY10S65		
		18A				FDCY18S120
		25A		FDCY25S65		
		20A		FDCY20C65		
		36A				FDCY36C120
		50A		FDCY50C65		
TO-247-2 (Type:A)	 	18A				FDCW18T120
		20A			FDC2WT20S120*	
		40A			FDC2WT40S120*	

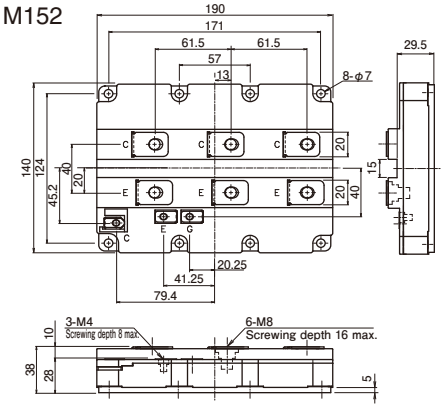
*Under development

Package Outlines, mm

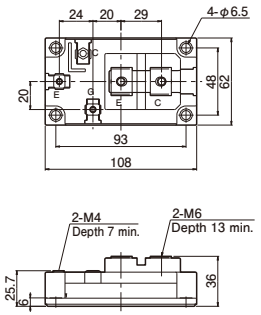
M151



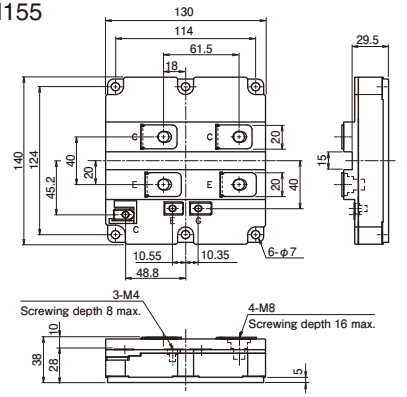
M152



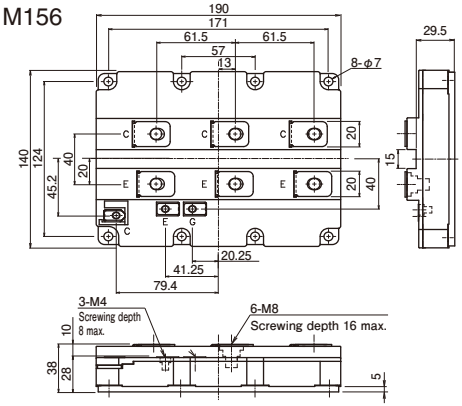
M153



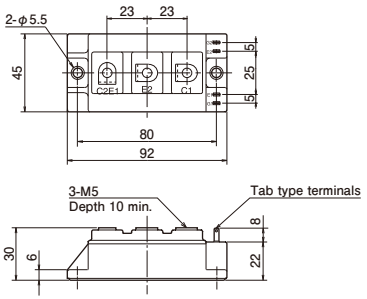
M155



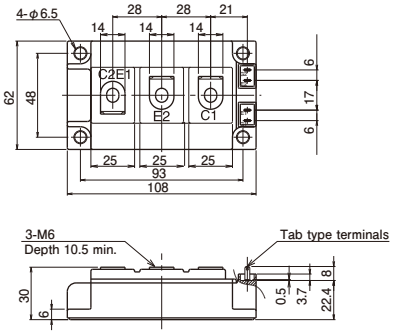
M156



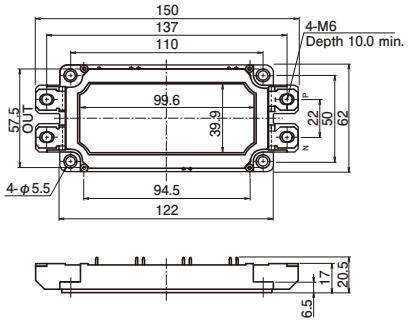
M233



M249

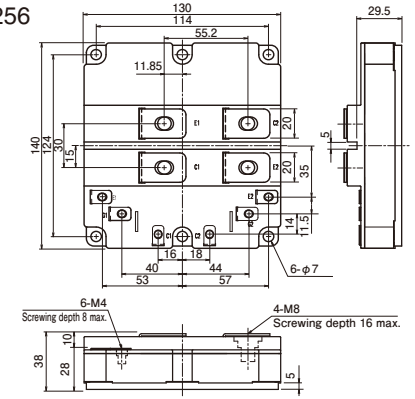


M254

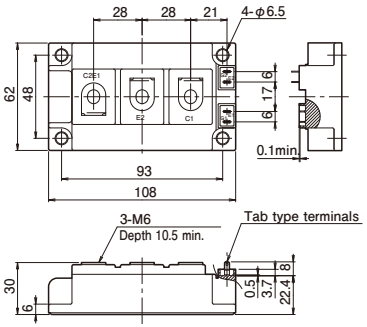


Solder pins

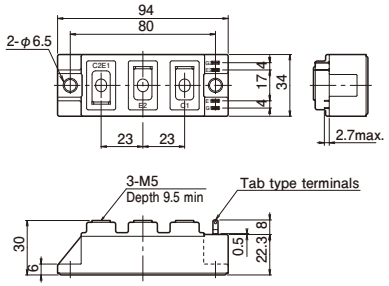
M256



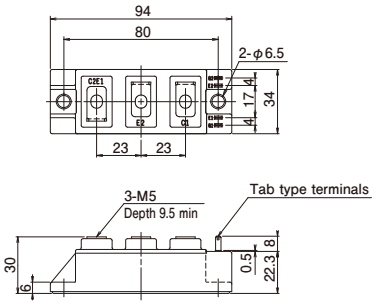
M259



M262

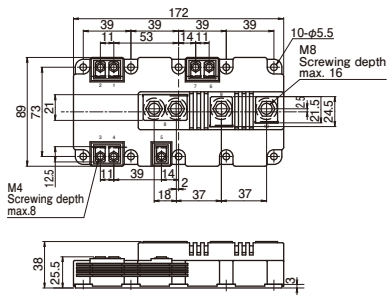


M263

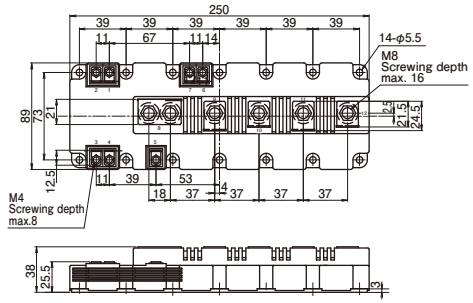


Package Outlines, mm

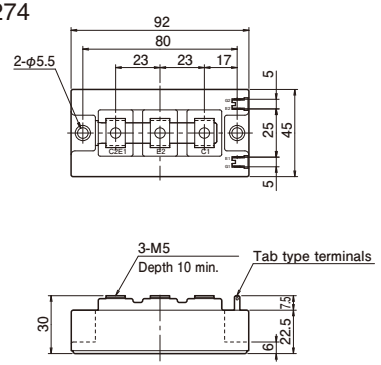
M271



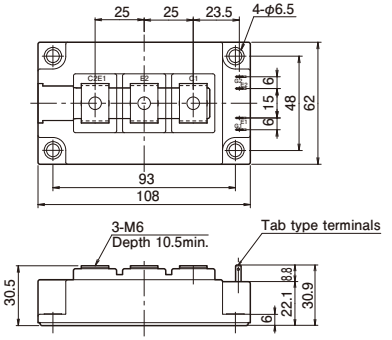
M272



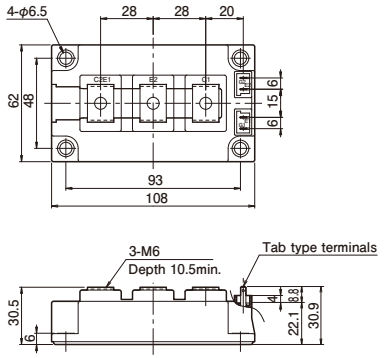
M274



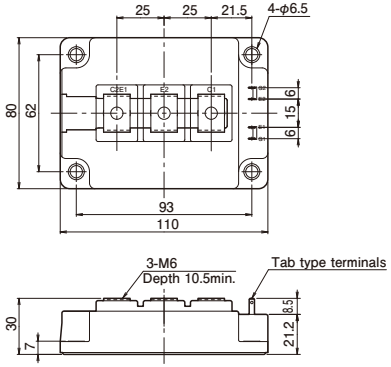
M275



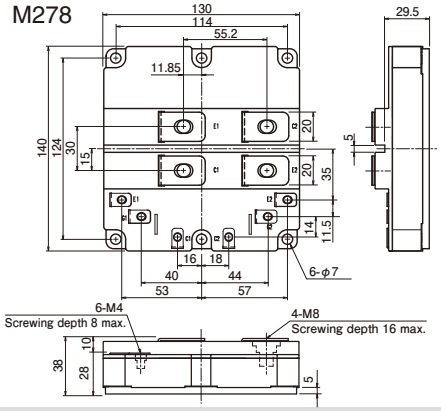
M276



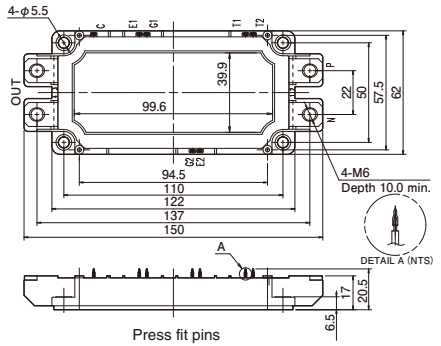
M277



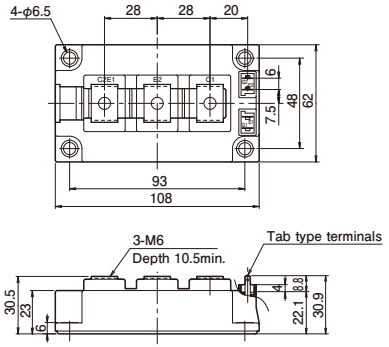
M278



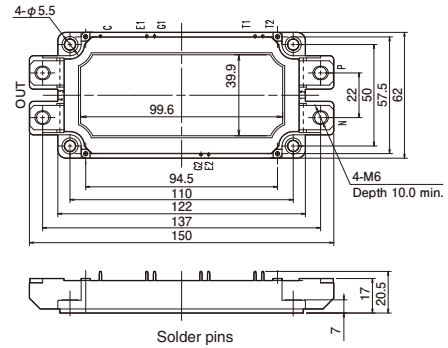
M282



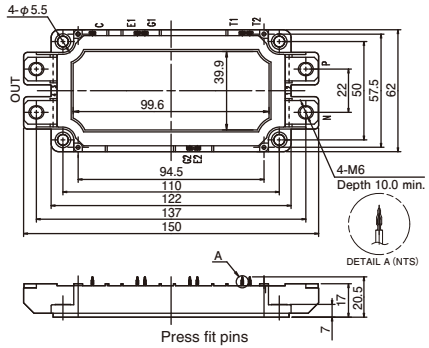
M283



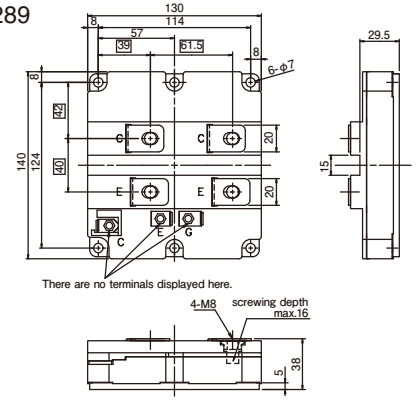
M285



M286

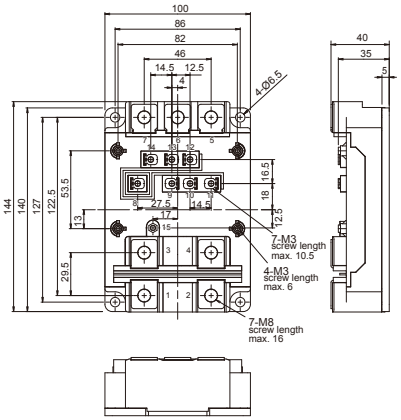


M289

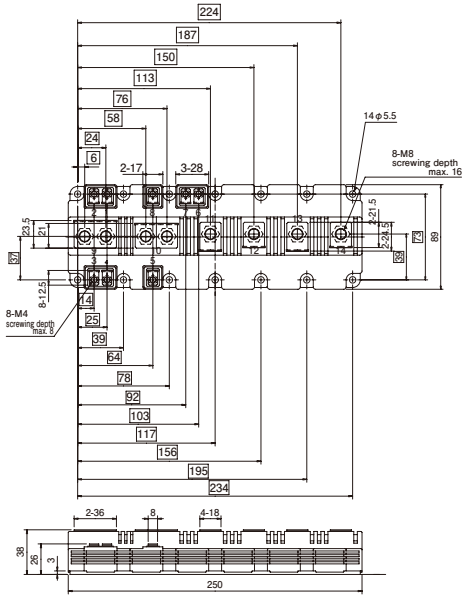


Package Outlines, mm

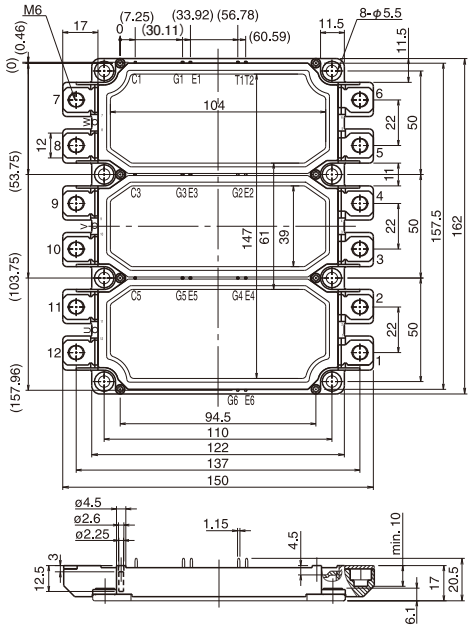
M292



M291

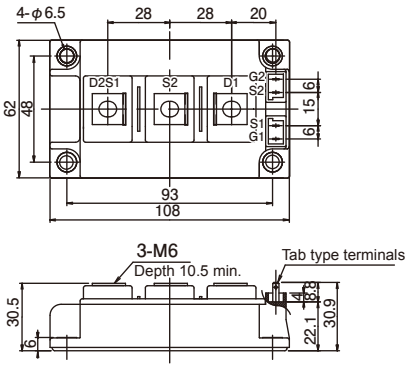


M629

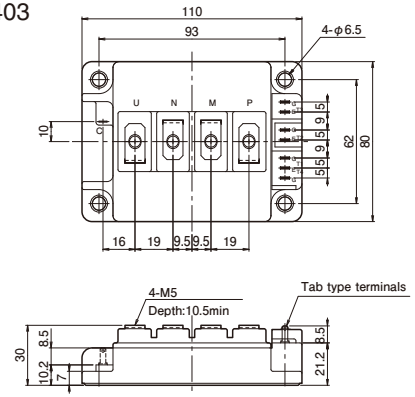


( ) : Theoretical dimensions, tolerance ø0.5

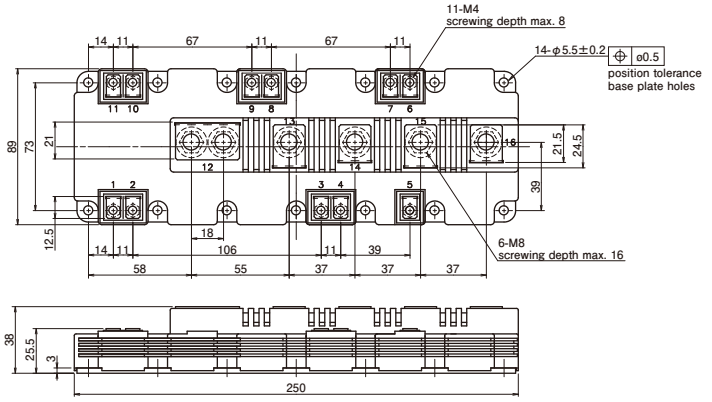
M295



M403

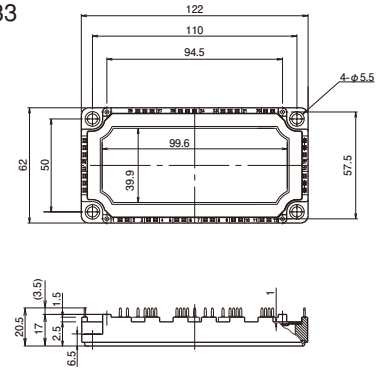


M404



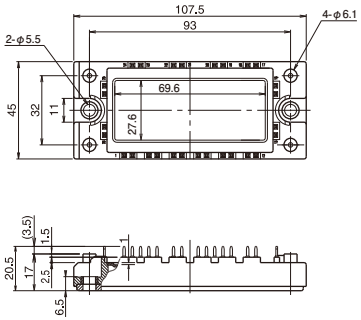
Package Outlines, mm

M633



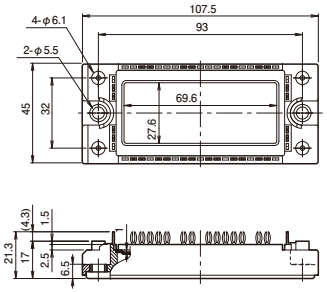
Solder pins

M636



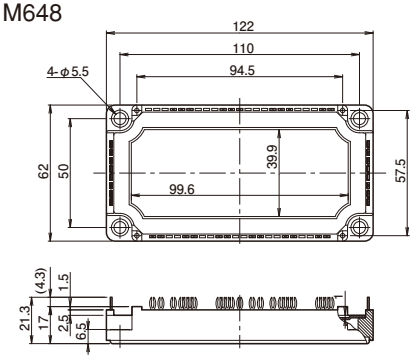
Solder pins

M647



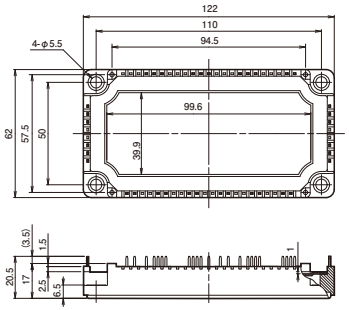
Press fit pins

M648



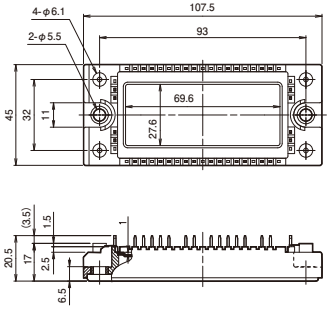
Press fit pins

M668



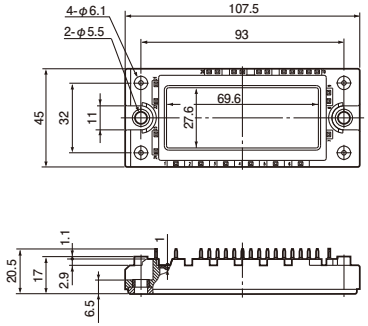
Solder pins

M669



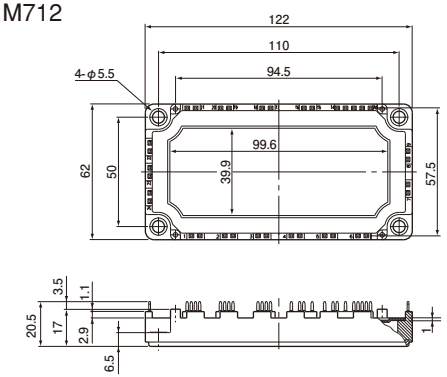
Solder pins

M711



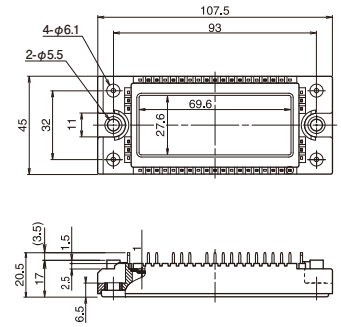
Solder pins

M712



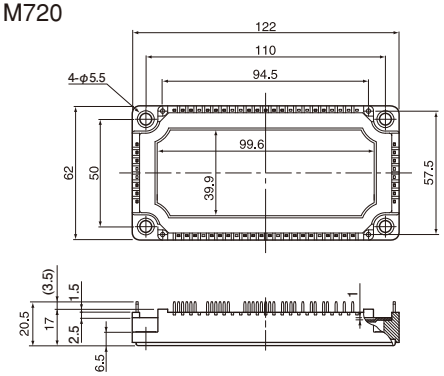
Solder pins

M719



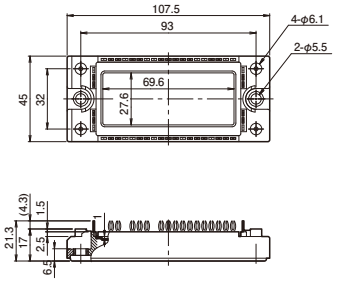
Solder pins

M720



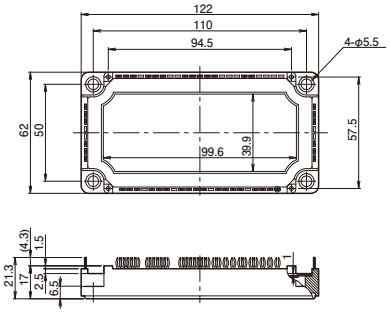
Solder pins

M721



Press fit pins

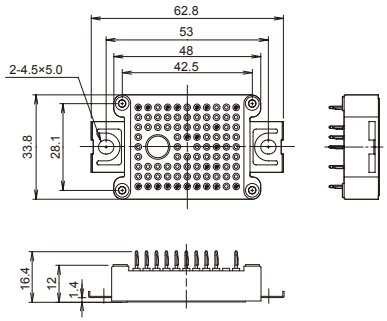
M722



Press fit pins

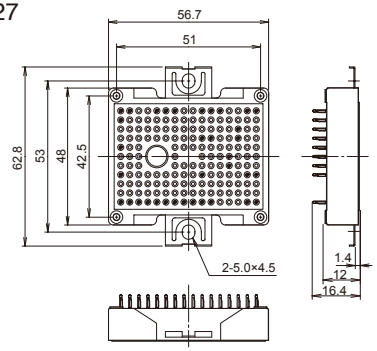
Package Outlines, mm

M726



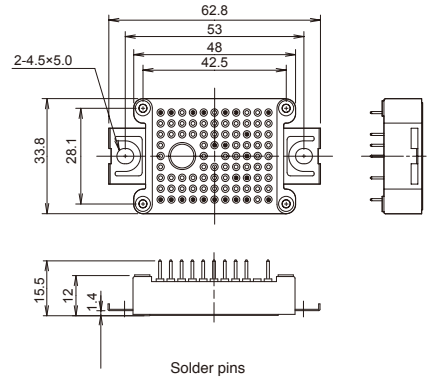
Press fit pins

M727



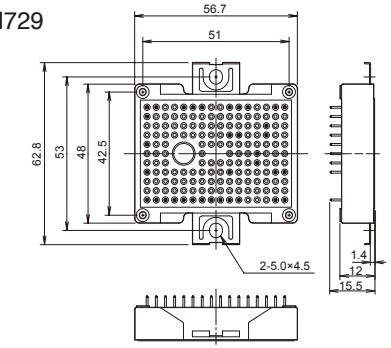
Press fit pins

M728



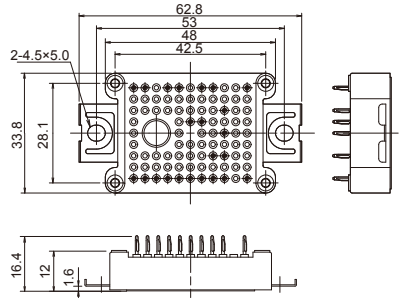
Solder pins

M729



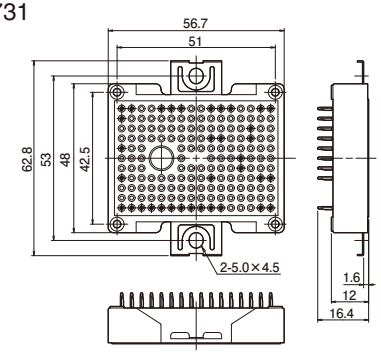
Solder pins

M730



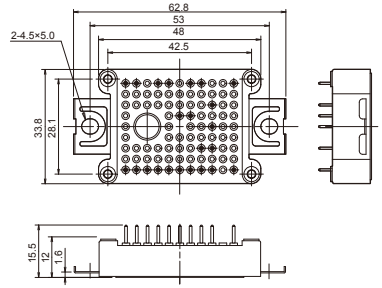
Press fit pins

M731



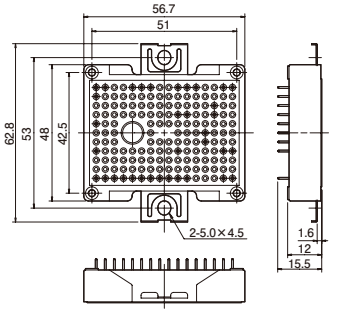
Press fit pins

M732



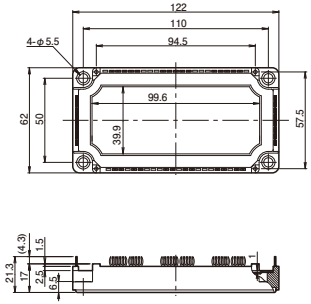
Solder pins

M733



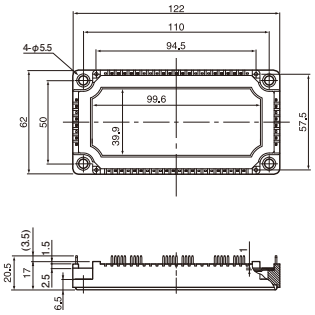
Solder pins

M1202



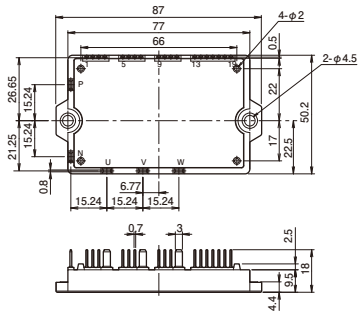
Press fit pins

M1203

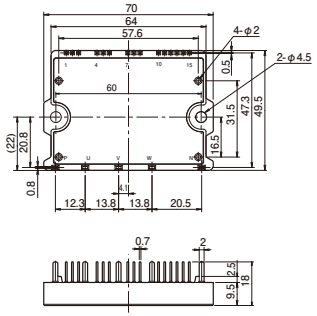


Solder pins

P626

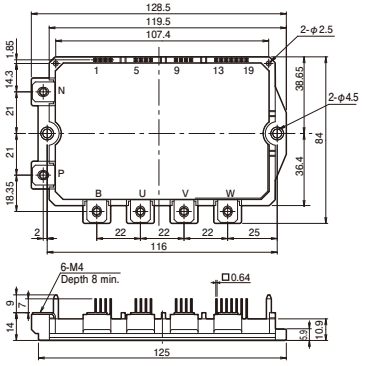


P629

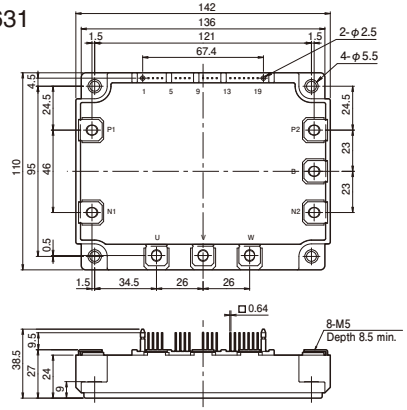


Package Outlines, mm

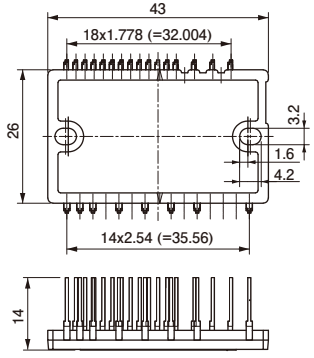
P630



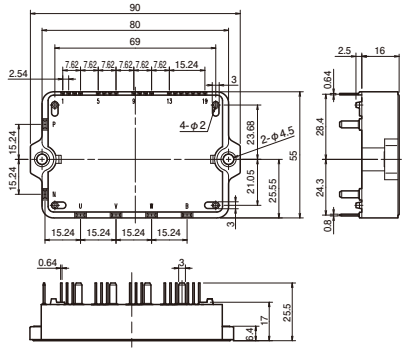
P631



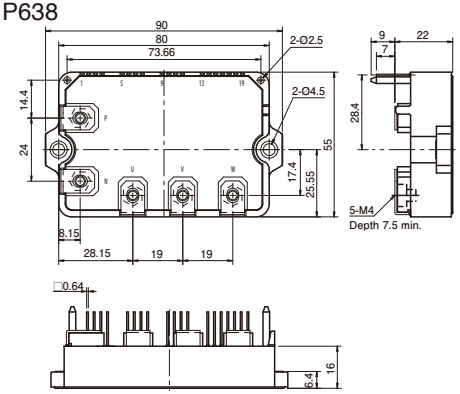
P633A



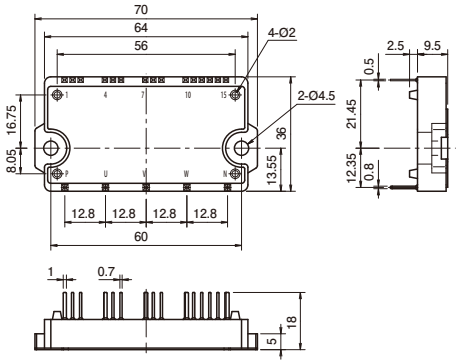
P636



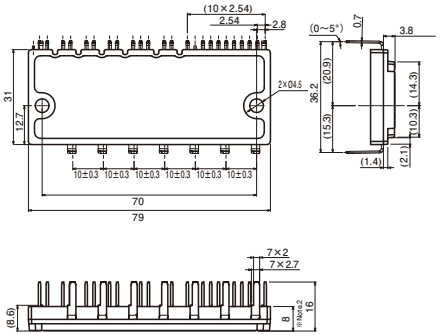
P638



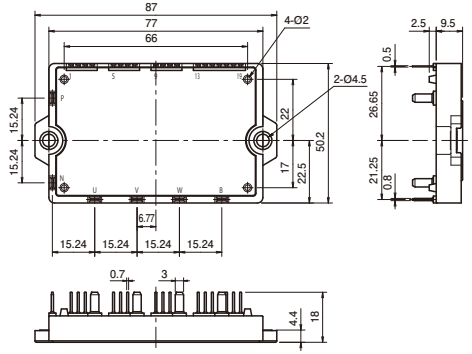
P639



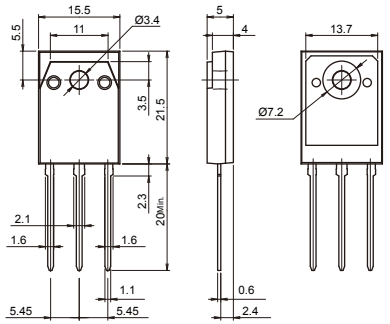
P642



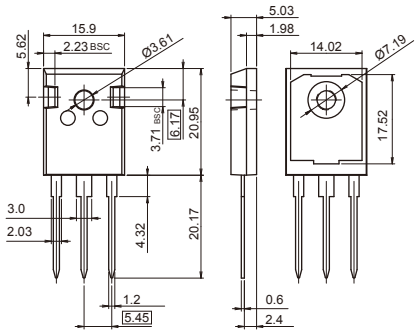
P644



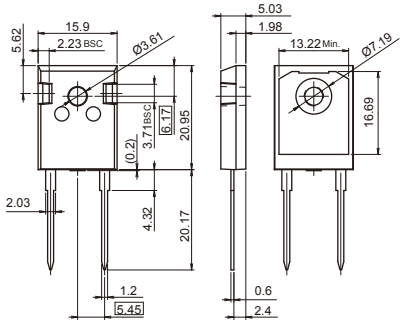
TO-247 (Type:A)



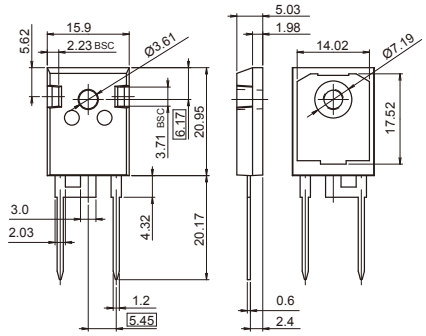
TO-247 (Type:B)



TO-247-2 (Type:A)

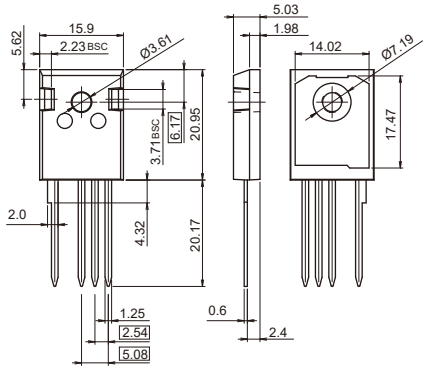


TO-247-2 (Type:B)

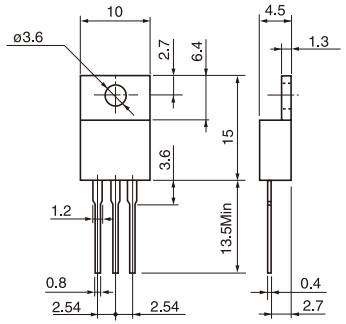


Package Outlines, mm

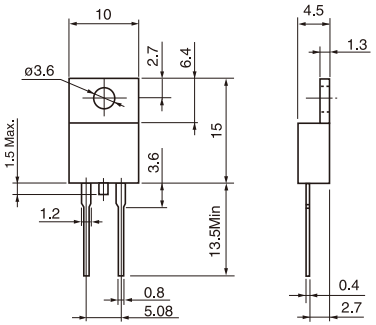
TO-247-4



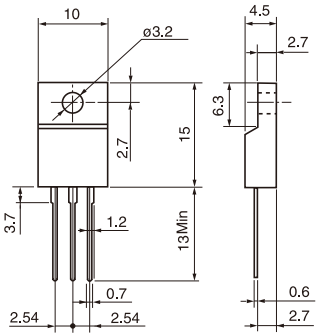
TO-220



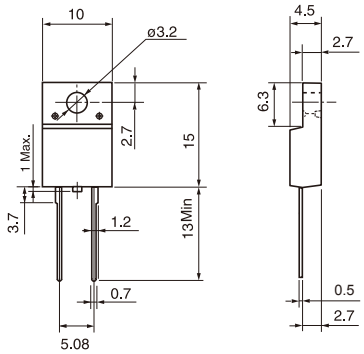
TO-220-2



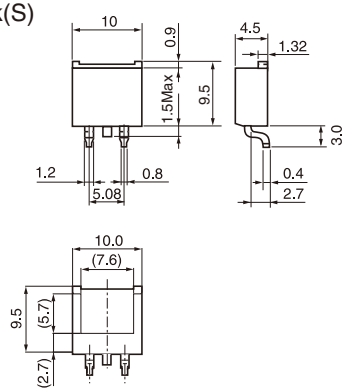
TO-220F



TO-220F-2



T-Pack(S)



WARNING

1. This Catalog contains the product specifications, characteristics, data, materials, and structures as of March 2021.
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   • 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).
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   • Submarine repeater equipment

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