

■ Electrical Characteristics at T_c=25°C (unless otherwise specified)

• Static Ratings

Description	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =1mA V _{GS} =0V	650	-	-	V
Gate Threshold Voltage	V _{GS(th)}	I _D =2.9mA V _{DS} =V _{GS}	3.0	4.0	5.0	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =650V V _{GS} =0V	-	-	3	μA
		V _{DS} =480V V _{GS} =0V	-	-	2	mA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±30V V _{DS} =0V	-	-	100	nA
Drain-Source On-State Resistance	R _{DS(on)}	I _D =26A V _{GS} =10V	-	53	71	mΩ
Gate- Resistance	R _G	f=1MHz, Open drain	-	1.3	-	Ω

• Dynamic Ratings

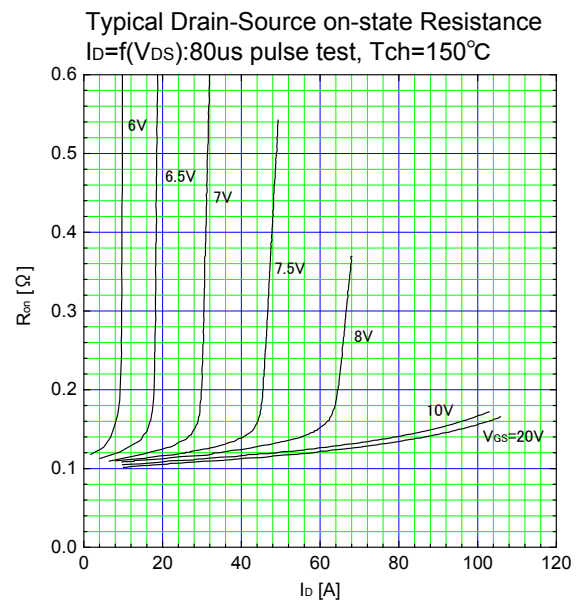
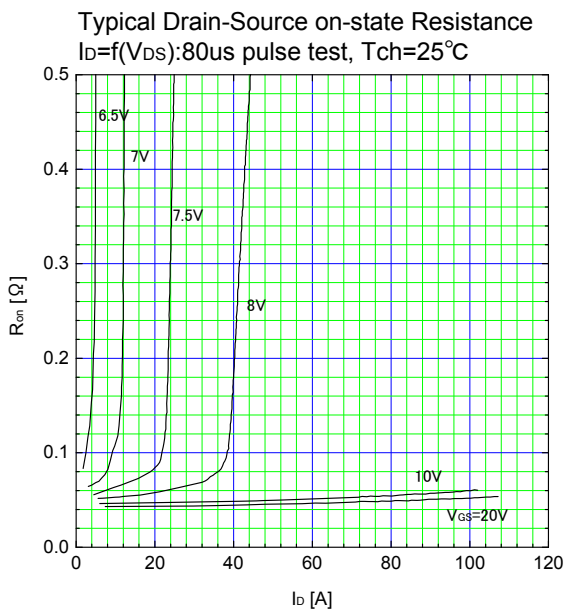
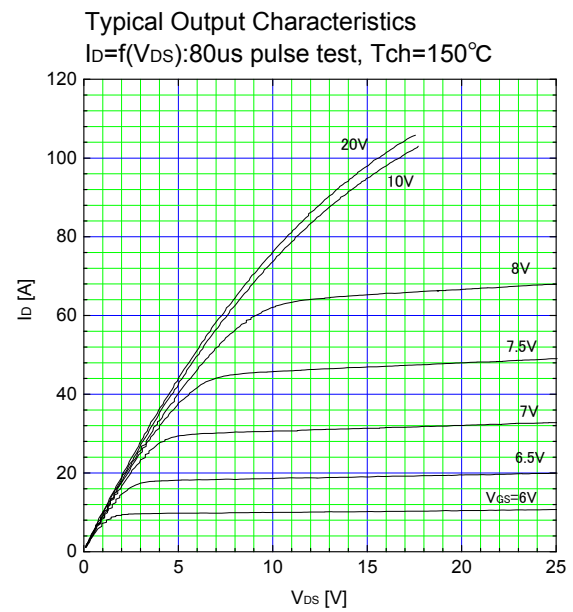
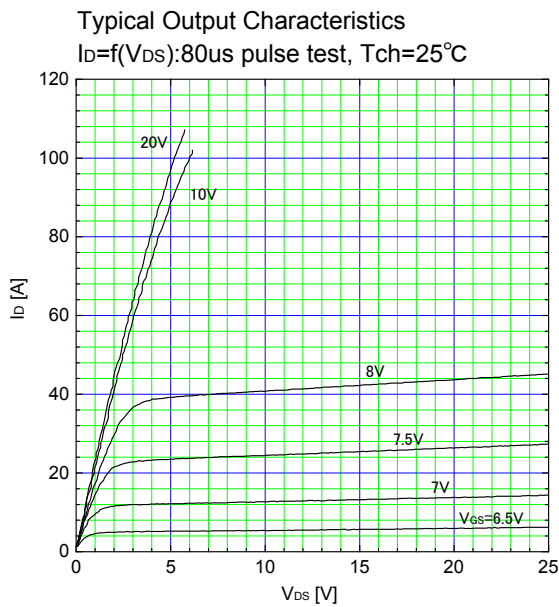
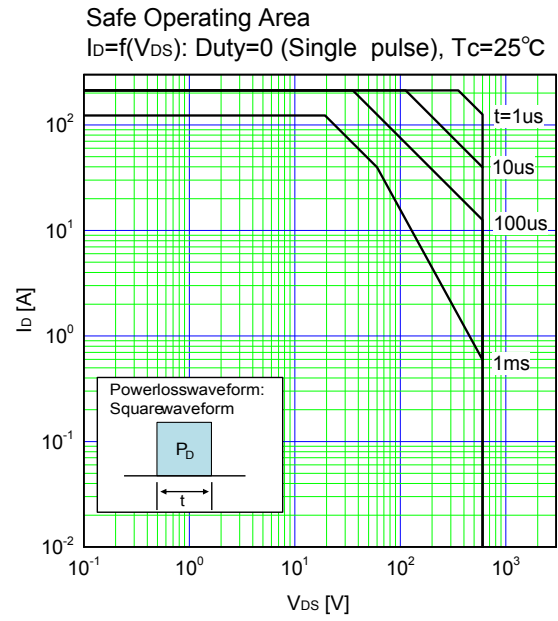
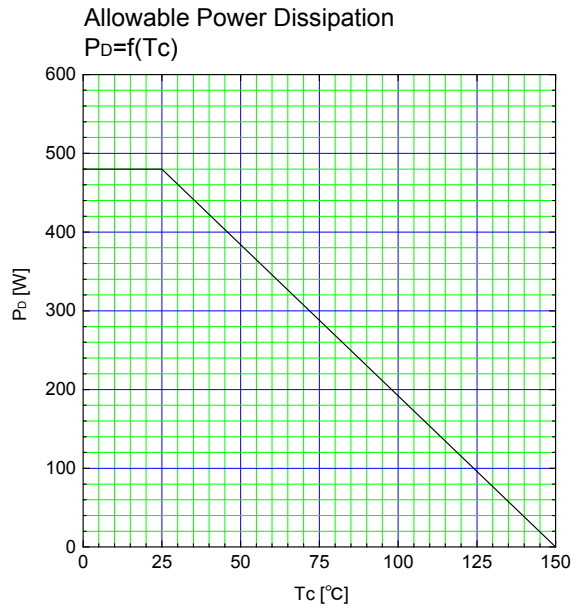
Description	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Transconductance	g _{fs}	I _D =26A V _{DS} =10V	12	-	-	S
Input Capacitance	C _{iss}	V _{DS} =400V V _{GS} =0V	-	4000	-	pF
Output Capacitance	C _{oss}	f=250kHz	-	150	-	
Reverse Transfer Capacitance	C _{rss}		-	10	-	
Turn-On Time	t _{d(on)}	V _{DD} =400V, V _{GS} =10V I _D =26A, R _G =15Ω See Fig.3 and Fig.4	-	190	-	ns
	t _r		-	60	-	
Turn-Off Time	t _{d(off)}		-	250	-	
	t _f		-	25	-	
Total Gate Charge	Q _G	V _{DD} =480V, I _D =52A	-	165	-	nC
Gate-Source Charge	Q _{GS}	V _{GS} =10V	-	35	-	
Gate-Drain Charge	Q _{GD}	See Fig.5	-	110	-	

• Reverse Ratings

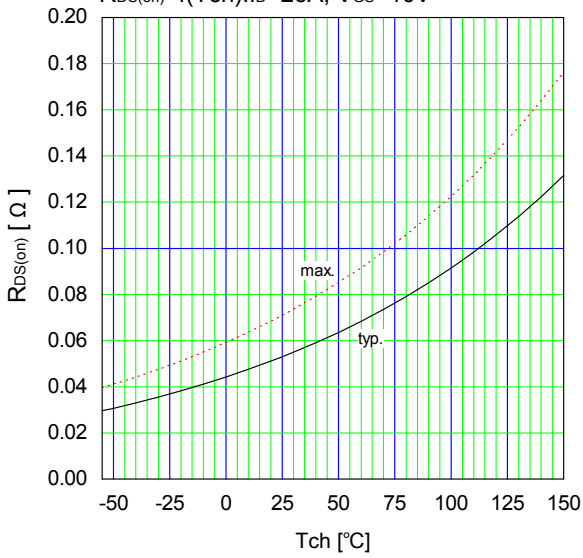
Description	Symbol	Conditions	Min.	Typ.	Max.	Unit
Avalanche Capability	I _{AV}	L=8.0mH, T _{ch} =25°C See Fig.1 and Fig.2	16	-	-	A
Diode Forward On-Voltage	V _{SD}	I _F =52A, V _{GS} =0V T _{ch} =25°C	-	-	1.35	V
Reverse Recovery Time	t _{rr}	I _F =33A, V _{GS} =0V V _{DD} =300V	-	270	-	ns
Reverse Recovery Charge	Q _{rr}	-di/dt=100A/μs See Fig.6	-	2.5	-	μC

■ Thermal Characteristics

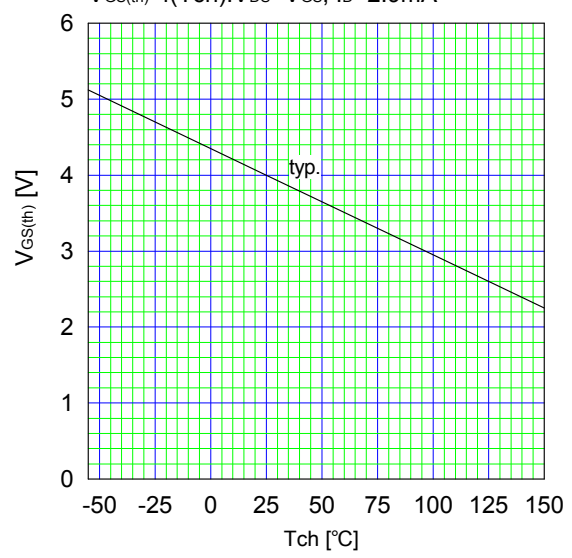
Description	Symbol	Min.	Typ.	Max.	Unit
Channel to Case	R _{th(ch-c)}	-	-	0.26	°C/W
Channel to Ambient	R _{th(ch-a)}	-	-	50	°C/W



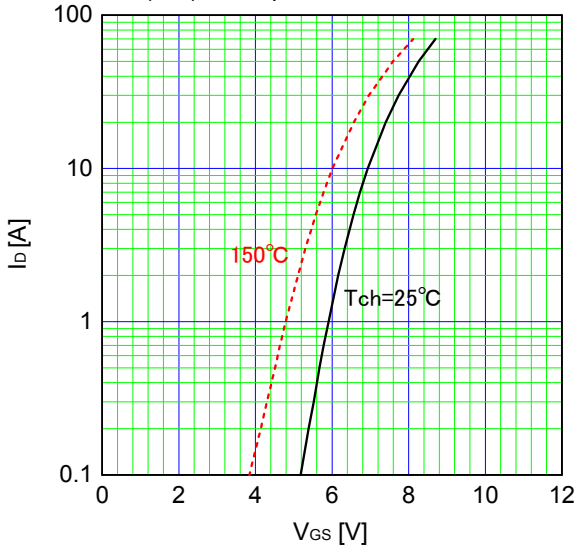
Drain-Source On-state Resistance
 $R_{DS(on)}=f(T_{ch}):I_D=26A, V_{GS}=10V$



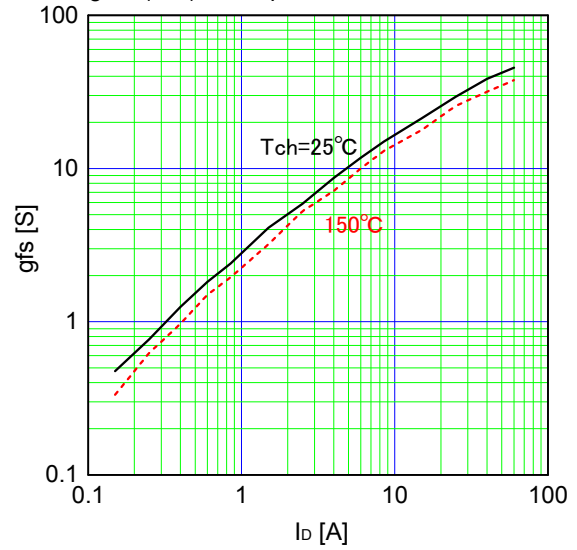
Gate Threshold Voltage vs. T_{ch}
 $V_{GS(th)}=f(T_{ch}):V_{DS}=V_{GS}, I_D=2.9mA$



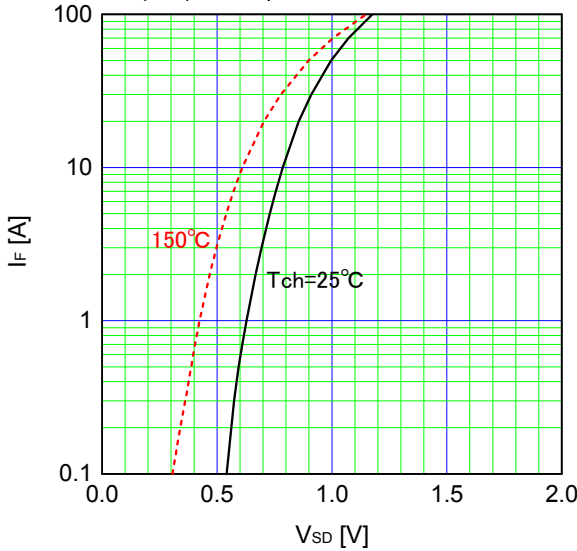
Typical Transfer Characteristics
 $I_D=f(V_{GS}):80 \mu s \text{ pulse test}, V_{DS}=25V$



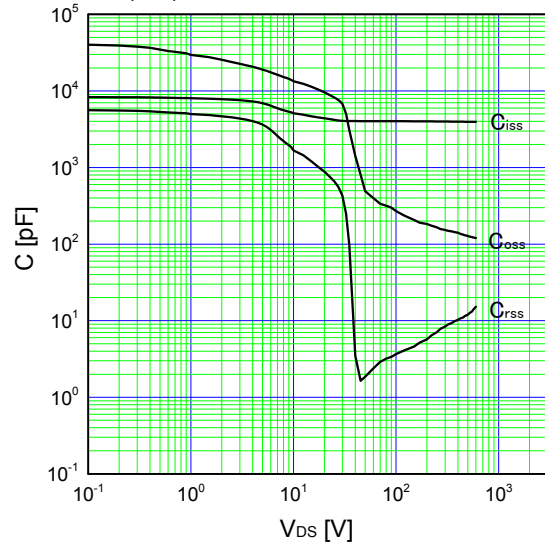
Typical Trans conductance
 $g_{fs}=f(V_{GS}):80 \mu s \text{ pulse test}, V_{DS}=25V$



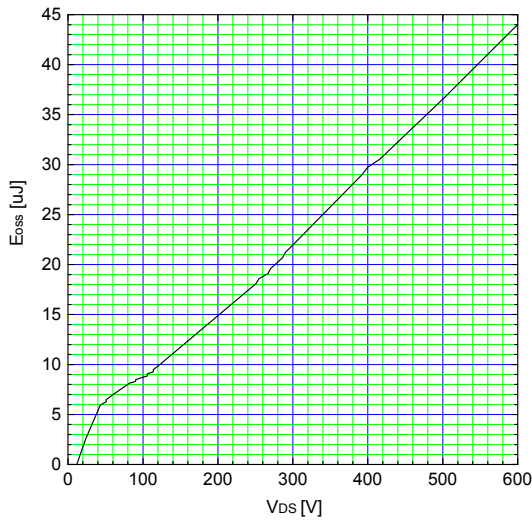
Typical Forward Characteristics of Reverse Diode
 $I_F=f(V_{SD}):80 \mu s \text{ pulse test}$



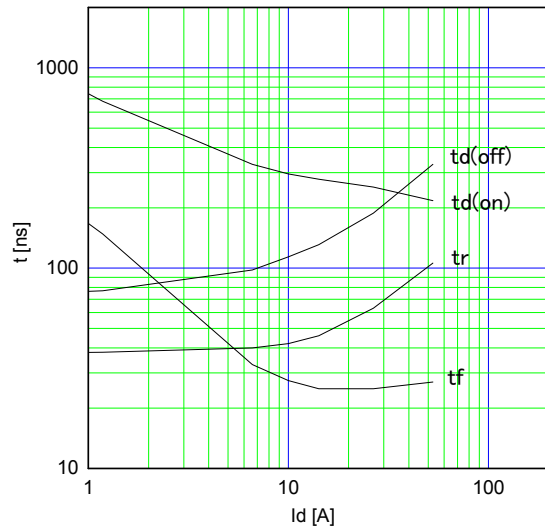
Typical Capacitance
 $C=f(V_{DS}):V_{GS}=0V, f=250kHz$



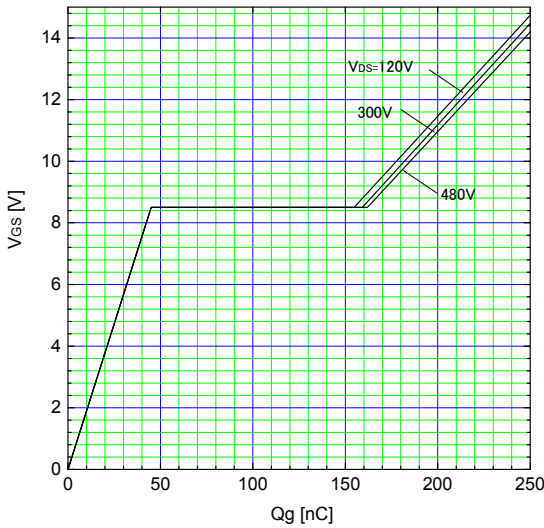
Typical Cross stored energy



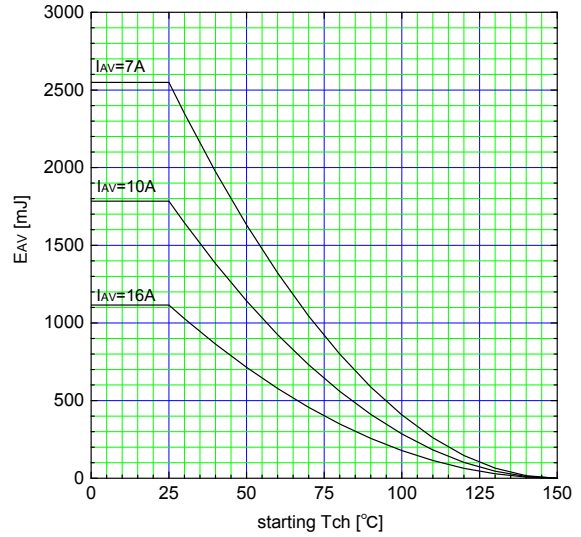
Typical Switching Characteristics vs. I_D $T_{ch}=25^\circ\text{C}$
 $t=f(I_D): V_{dd}=400\text{V}, V_{GS}=10\text{V}/0\text{V}, R_G=15\Omega$



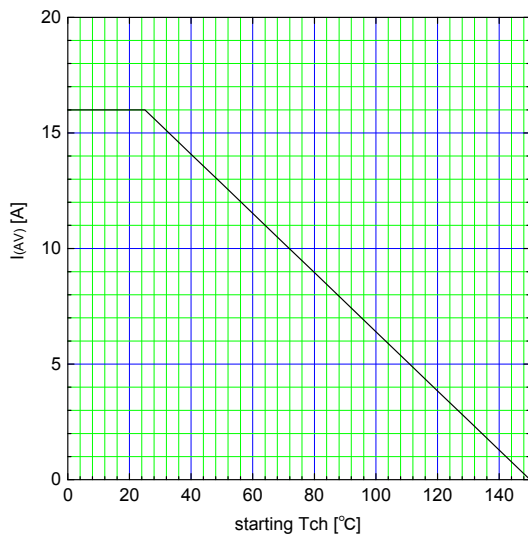
Typical Gate Characteristics
 $V_{GS}=f(Q_g): I_D=52\text{A}, T_{ch}=25^\circ\text{C}$



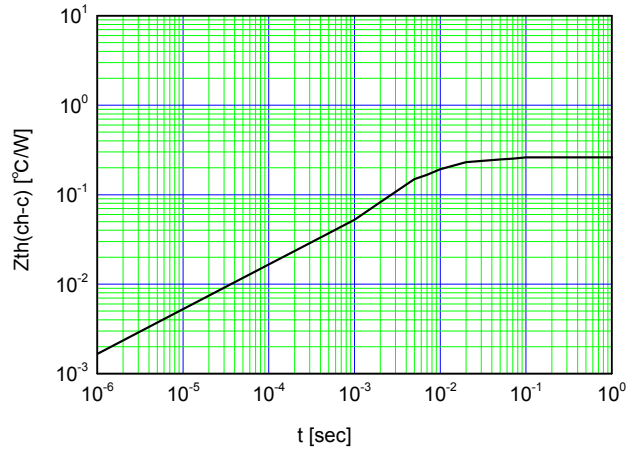
Maximum Avalanche Energy vs. starting T_{ch}
 $E_{(AV)}=f(\text{starting } T_{ch}), V_{CC}=60\text{V}, I_{(AV)}\leq 16\text{A}$



Maximum Avalanche Current vs. starting T_{ch}
 $I_{(AV)}=f(\text{starting } T_{ch}), \text{single pulse}$



Transient Thermal Impedance
 $Z_{th(ch-c)}=f(t): D=0$



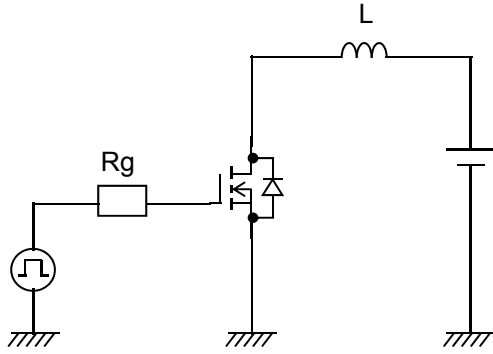


Fig.1 Avalanche Test circuit

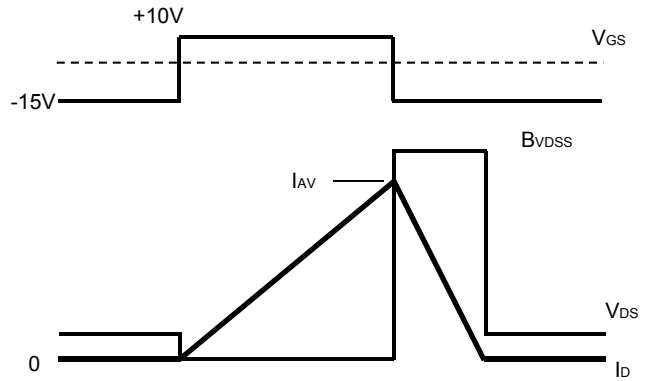


Fig.2 Operating waveforms of Avalanche Test

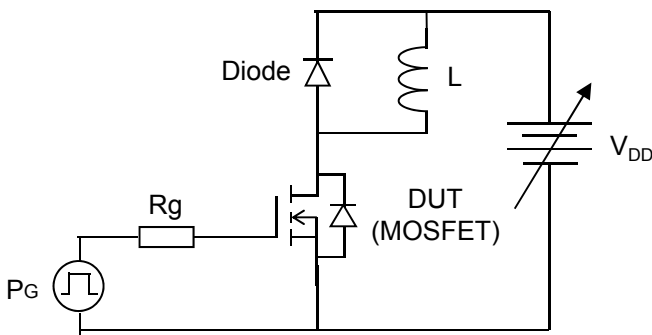


Fig.3 Switching Test circuit

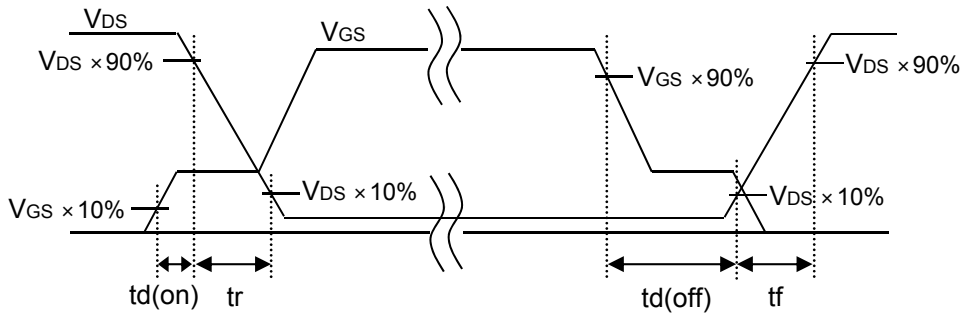


Fig.4 Operating waveform of Switching Test

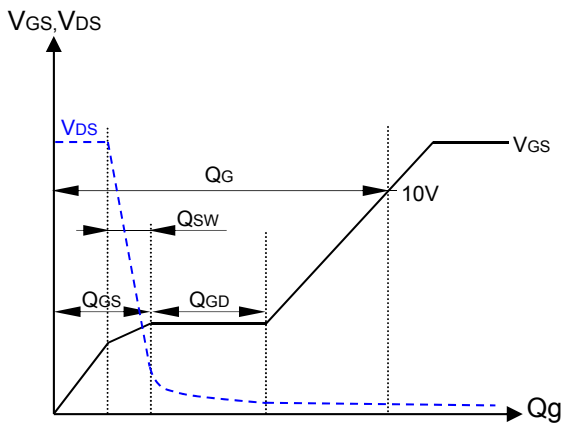


Fig.5 Operating waveform of Gate charge Test

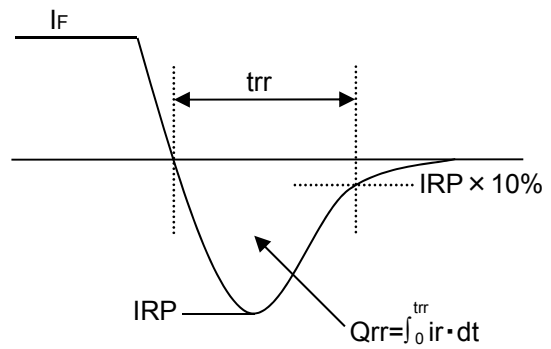


Fig.6 Operating waveform of Body diode Recovery Test

WARNING

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 - Medical equipment • Burglar alarms, fire alarms, emergency equipment etc.
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