

Schematic diagram

Features:

- ☐ Low Intrinsic Capacitances.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Unrivalled Gate Charge :Qg= 6 nC (Typ.).
- ☐ BVDSS=650 V,I_D=1A
- ☐ R_{DS(on)} : 17 Ω (Max) @V_G=10V
- ☐ 100% Avalanche Tested

Absolute Maximun Ratings(TA=25°Cunless otherwise noted)

Parameter	Symblo	Limit	Unit
Drain-Source Voltage	V _{DS}	650	V
Gate-Source Voltage	V _{GS}	±30	V
Drain Current-Continuous	I _D	1	A
Drain Current-Pulsed ^(Note 1)	I _{DM}	10	A
Maximum Power Dissipation	P _D	1.7	W
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-55 To 150	°C

Thermal Characteristic

Thermal Resistance ,Junction-to-Ambient ^(Note 2)	R _{JA}	73.5	°C/W
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Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	650			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$			1	A
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$			± 100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0		4.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=0.5A$			17	Ω
Forward Transconductance	g_{FS}	$V_{DS}=40V, I_D=0.5A$	0.5			S
Dynamic Characteristics (Note4)						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V$ $F=1MHz$		120		PF
Output Capacitance	C_{oss}			18		PF
Reverse Transfer Capacitance	C_{rss}			4		PF
Switching Characteristics (Note 4)						
Turn-on DelayTime	$t_{d(on)}$	$V_{DS}=325V, I_D=0.8A$ $R_{GEN}=25\Omega$		7		nS
Turn-on Rise Time	t_r			20		nS
Turn-Off Delay Time	$t_{d(off)}$			15		nS
Turn-Off Fall Time	t_f			26		nS
Total Gate Charge	Q_g	$V_{DS}=480V, I_D=0.8A$ $V_{GS}=10V$		6		nC
Gate-Source Charge	Q_{gs}			1.5		nC
Gate-Drain Charge	Q_{gd}			3.6		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	$V_{GS}=10V, I_S=1A$			1.3	V
Diode Forward Current (Note 2)	I_S				1	A

Notes:

- 1: Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2: Surface Mounted on FR4 Board, $t \leq 10$ sec.
- 3: Pulse Test: Pulse Width $< 300\mu s$, Duty Cycle $< 2\%$.
- 4: Guaranteed by design, not subject to production

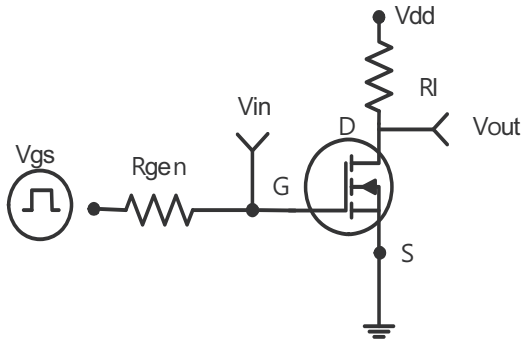


Figure 1: Switching Test Circuit

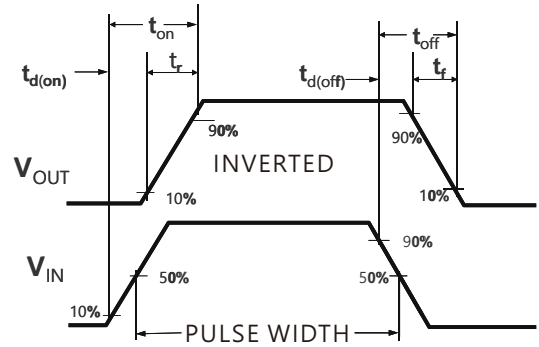
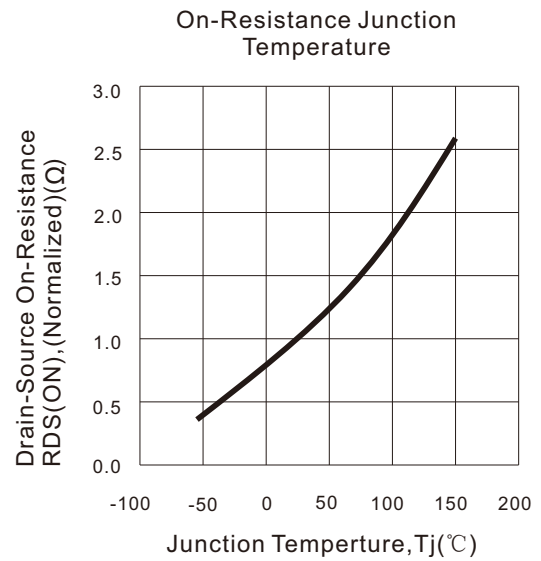
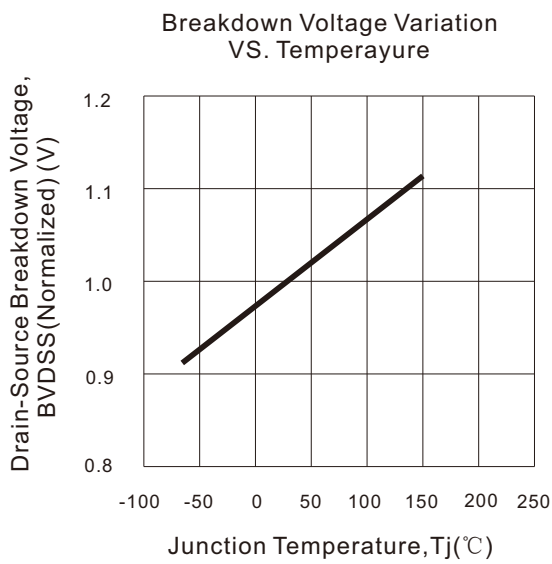
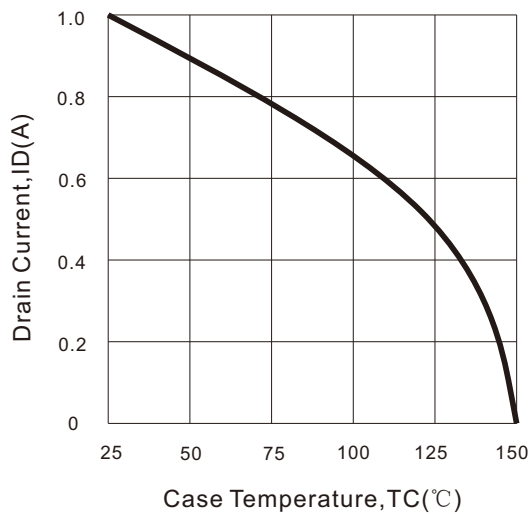


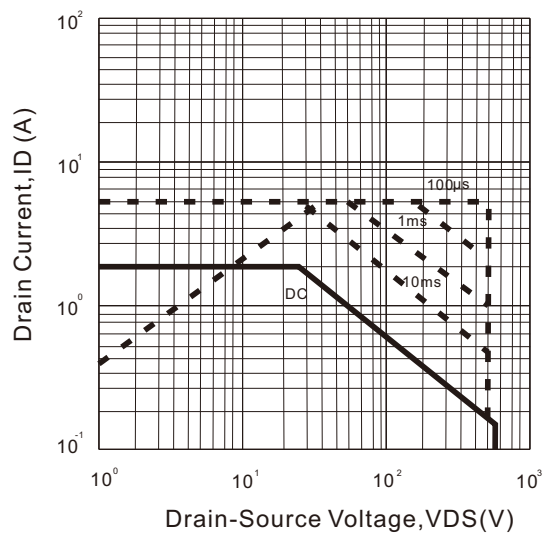
Figure 1: Switching Waveforms



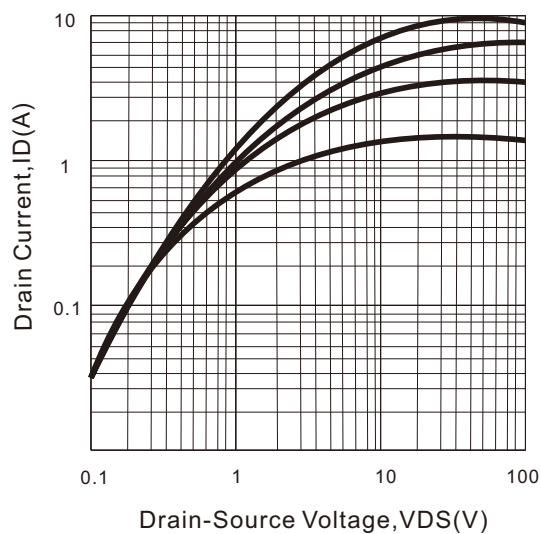
Maximum Drain Current
VS. Case Temperature



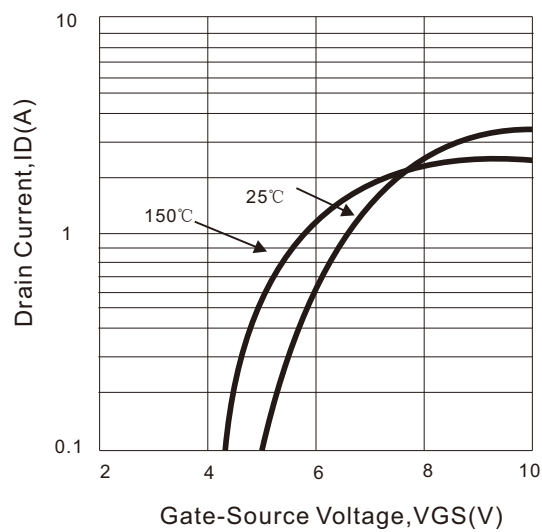
Maximum Safe Operating Area



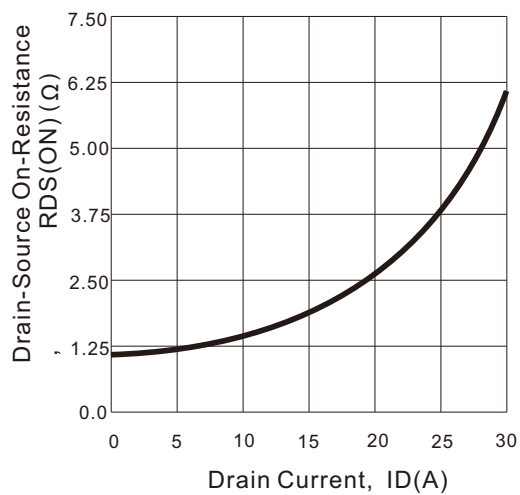
On-State Characteristics



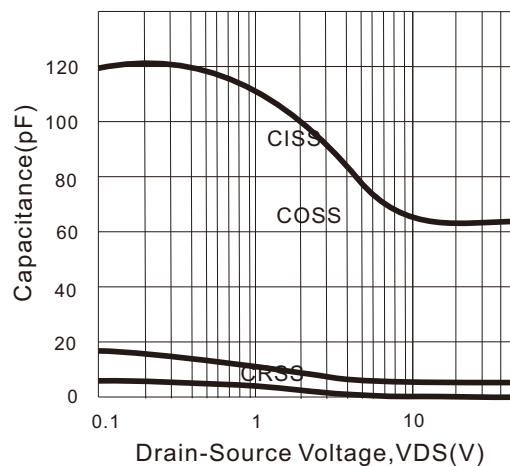
Transfer Characteristics



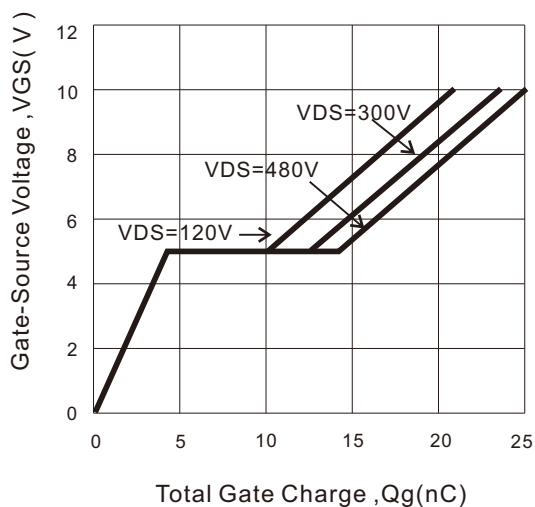
On-Resistance Variation vs.
Drain Current and Gate Voltage



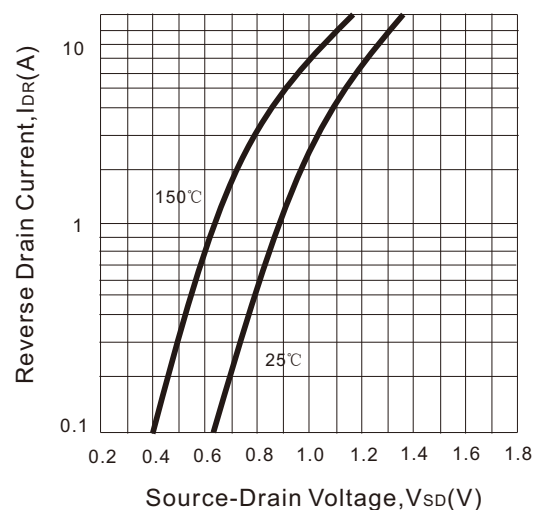
Capacitance Characteristics
(Non-Repetitive)



Gate Charge Characteristics



Body Diode Forward Voltage Variation
With Source Current and Temperature



Transient Thermal Response Curve

