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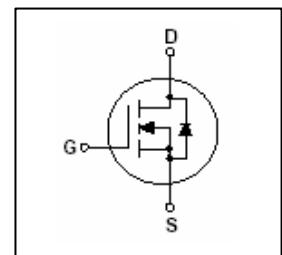
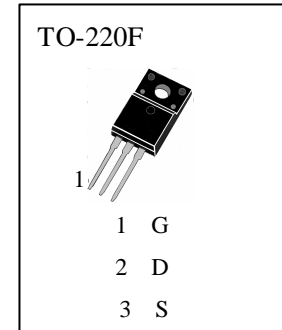
APPLICATIONS

High Voltage High-Speed Switching.

ABSOLUTE MAXIMUM RATINGS ($T_a=25$)

T_{stg}	—Storage Temperature.....	-55~150
T_j	—Operating Junction Temperature	150
P_D	— Allowable Power Dissipation ($T_c=25$)	43W
V_{DSS}	— Drain-Source Voltage	200V
V_{DGR}	— Drain-Gate Voltage ($R_{GS}=1M$)	200V
V_{GSS}	— Gate-Source Voltage	$\pm 20V$
I_D	— *Drain Current($T_c=25$).....	18A

* Drain current limited by maximum junction temperature



ELECTRICAL CHARACTERISTICS ($T_a=25$)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	200			V	$I_D=250 \mu A, V_{GS}=0V$
I_{DSS}	Zero Gate Voltage Drain Current			10	μA	$V_{DS}=200V, V_{GS}=0$
I_{GSS}	Gate -Source Leakage Current			± 100	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
$V_{GS(th)}$	Gate Threshold Voltage	2.0		4.0	V	$V_{DS}=V_{GS}, I_D=250 \mu A$
$R_{DS(on)}$	Static Drain-Source On-Resistance		0.145	0.18	Ω	$V_{GS}=10V, I_D=9A$
g_{fs}	Forward Transconductance		13		S	$V_{DS}=40V, I_D=9A^*$
C_{iss}	Input Capacitance		1300	1700	pF	} $V_{DS}=25V, V_{GS}=0, f=1MHz$
C_{oss}	Output Capacitance		175	230	pF	
C_{rss}	Reverse Transfer Capacitance		45	60	pF	
$t_{d(on)}$	Turn - On Delay Time		20	50	nS	} $V_{DD}=100V,$ $I_D=18A$ $R_G=25 \Omega^*$
t_r	Rise Time		145	300	nS	
$t_{d(off)}$	Turn - Off Delay Time		145	300	nS	
t_f	Fall Time		110	230	nS	
Q_g	Total Gate Charge		45	58	nC	} $V_{DS}=0.8V_{DSS}$ $V_{GS}=10V$ $I_D=18A^*$
Q_{gs}	Gate-Source Charge		6.5		nC	
Q_{gd}	Gate-Drain Charge		22		nC	
I_S	Continuous Source Current			18	A	
V_{SD}	Diode Forward Voltage			1.5	V	$I_S=18A, V_{GS}=0$
$R_{th(j-c)}$	Thermal Resistance , Junction-to-Case			2.89	/W	

*Pulse Test : Pulse Width 300 μs , Duty Cycle 2%

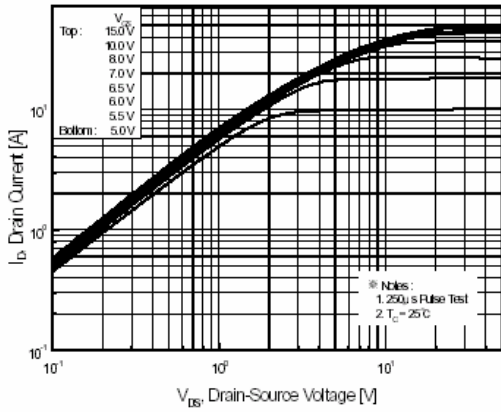


Figure 1. On-Region Characteristics

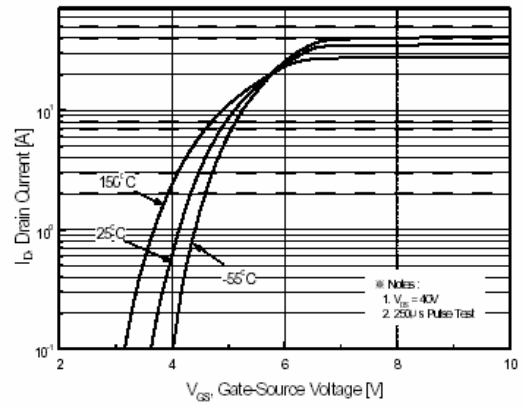


Figure 2. Transfer Characteristics

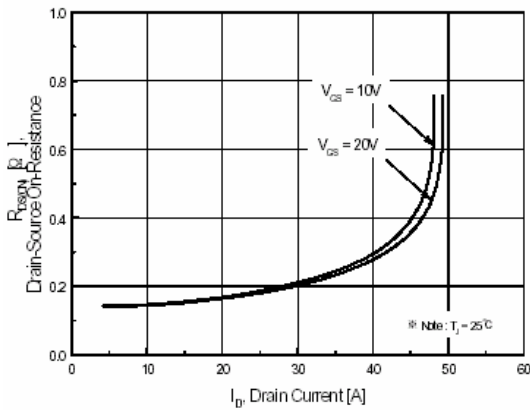


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

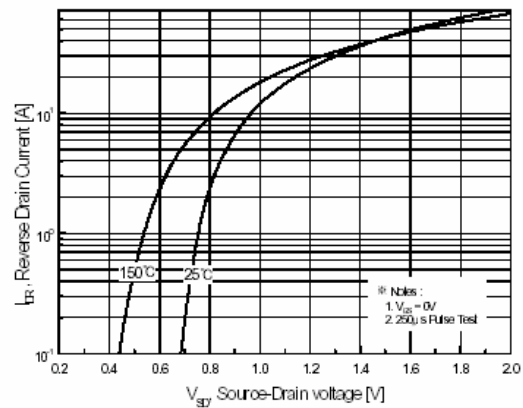


Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature

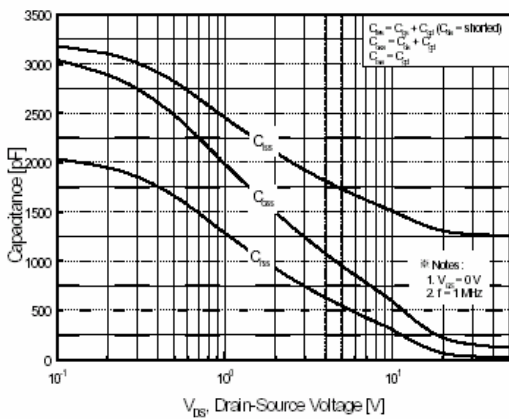


Figure 5. Capacitance Characteristics

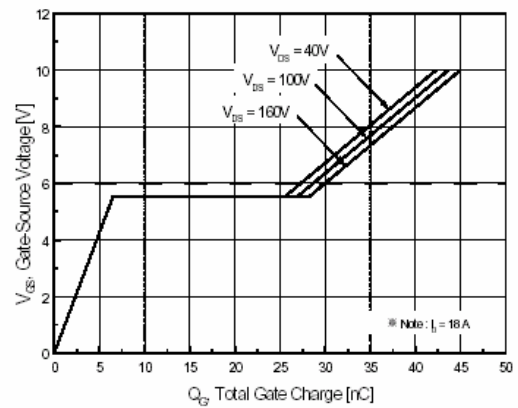


Figure 6. Gate Charge Characteristics



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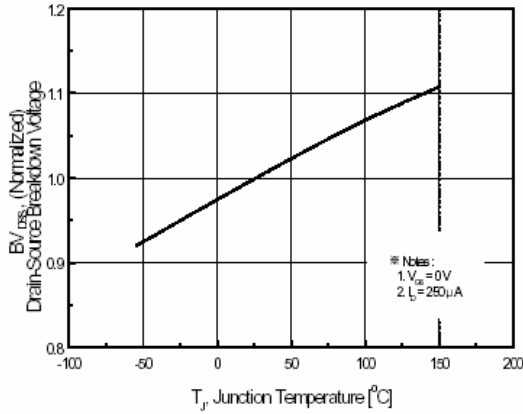


Figure 7. Breakdown Voltage Variation vs Temperature

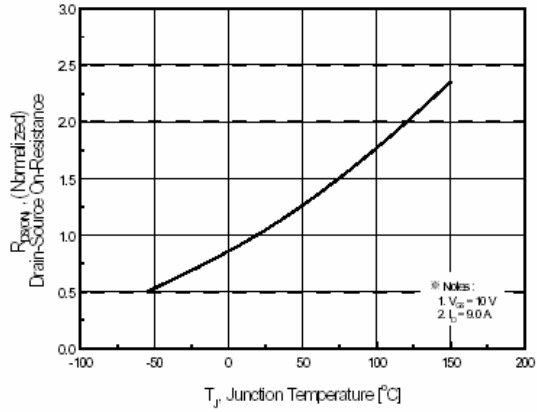


Figure 8. On-Resistance Variation vs Temperature

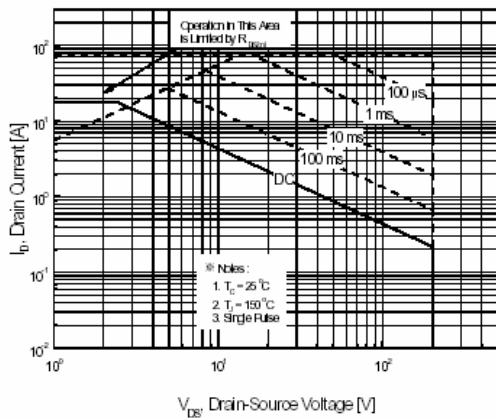


Figure 9 Maximum Safe Operating Area

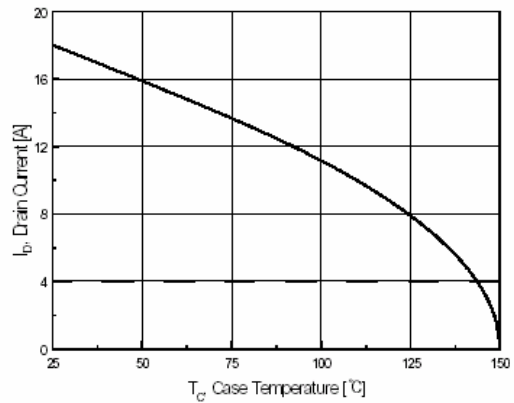


Figure 10. Maximum Drain Current vs Case Temperature

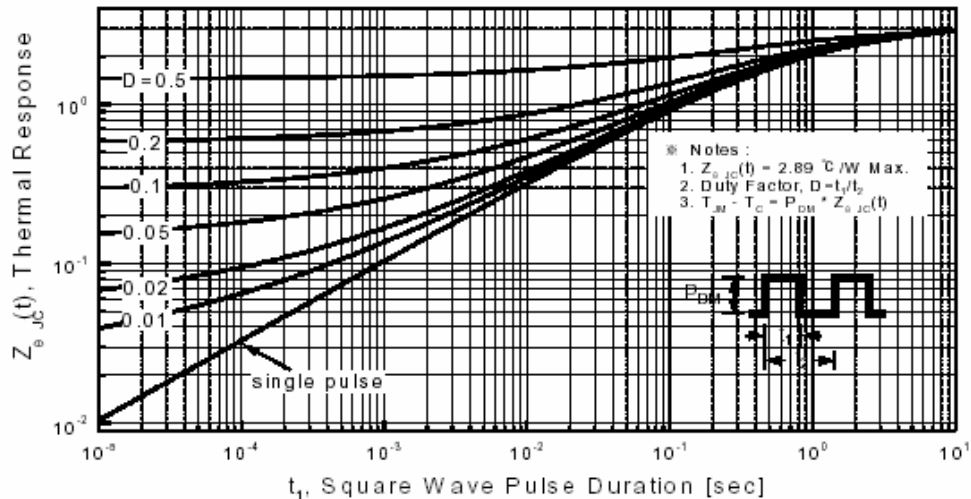
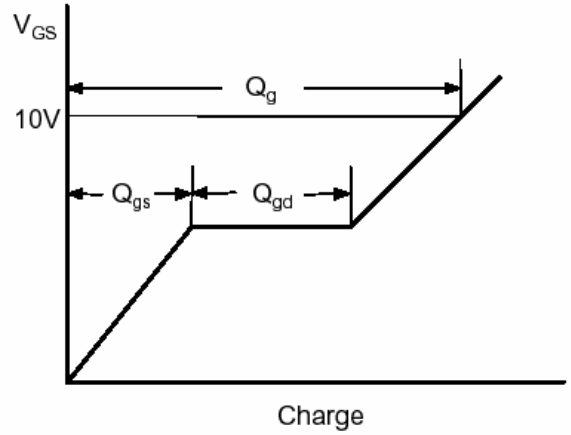
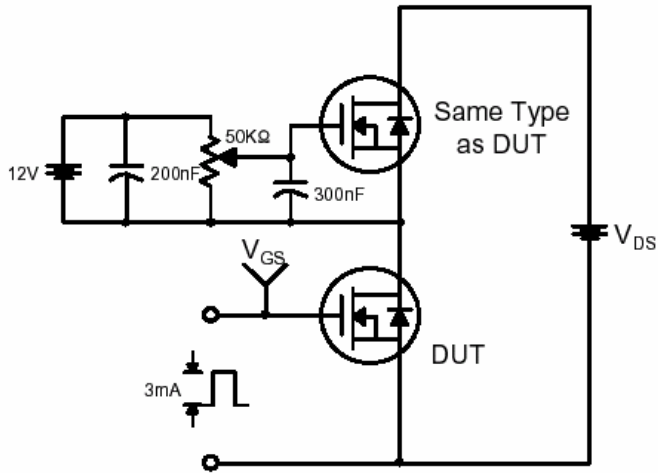


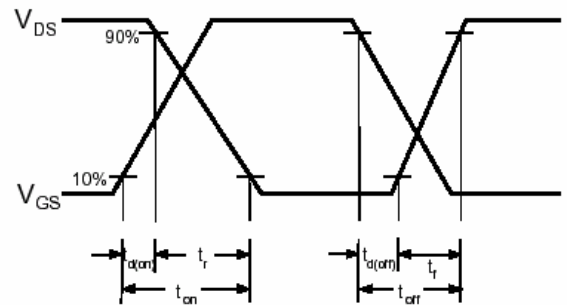
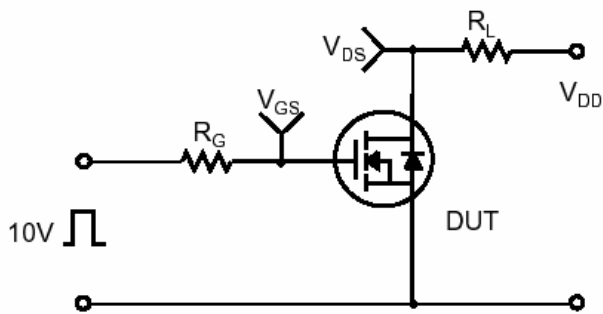
Figure 11 Transient Thermal Response Curve



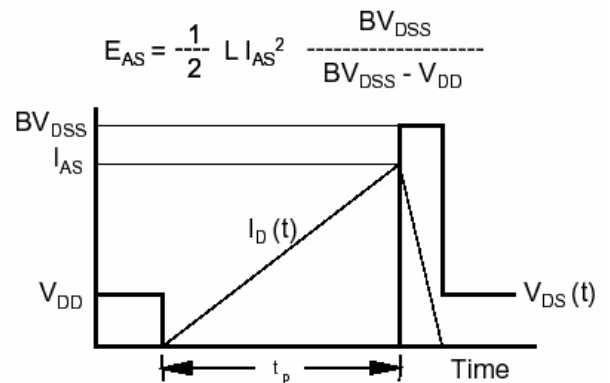
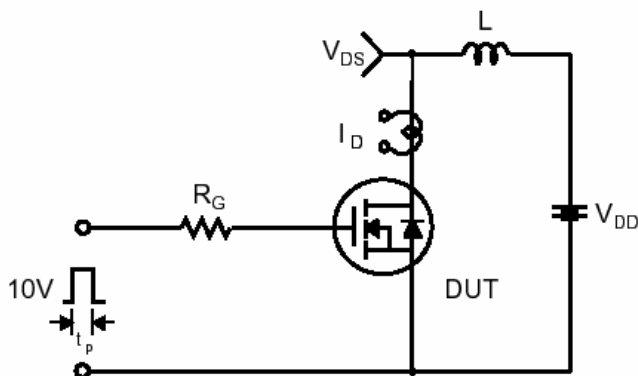
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms





Peak Diode Recovery dv/dt Test Circuit & Waveforms

