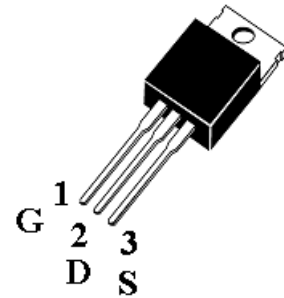


APPLICATIONS

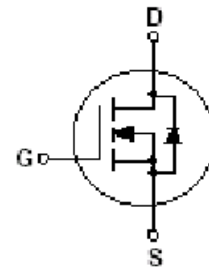
Low Voltage high-Speed Switching.

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

T _{stg}	Storage Temperature	.....	-55~175°C
T _j	Operating Junction Temperature	.....	150°C
P _D	Allowable Power Dissipation (T _c =25°C)	.....	130W
V _{DSS}	Drain-Source Voltage	.....	60V
V _{GSS}	Gate-Source Voltage	.....	±20V
I _D	Drain Current (T _c =25°C)	.....	50A



TO-220



ELECTRICAL CHARACTERISTICS (T_a=25°C)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV _{DSS}	Drain-Source Breakdown Voltage	60			V	I _D =250 μ A, V _{GS} =0V
I _{DSS}	Zero Gate Voltage Drain Current			1	μ A	V _{DS} = 60V, V _{GS} =0
I _{GSS}	Gate -Source Leakage Current			±100	nA	V _{GS} =±20V, V _{DS} =0V
V _{GS(th)}	Gate Threshold Voltage	2.0		4.0	V	V _{DS} = V _{GS} , I _D =250 μ A
R _{DS(on)}	Static Drain-Source On-Resistance		0.018	0.023	Ω	V _{GS} =10V, I _D =25A
C _{iss}	Input Capacitance		880	1140	pF	V _{DS} =25V, V _{GS} =0, f=1MHz
C _{oss}	Output Capacitance		430	560	pF	
C _{rss}	Reverse Transfer Capacitance		110	140	pF	
t _{d(on)}	Turn - On Delay Time		60	130	nS	V _{DD} =30V, I _D =25A R _G = 50 Ω *
t _r	Rise Time		185	380	nS	
t _{d(off)}	Turn - Off Delay Time		75	160	nS	
t _f	Fall Time		60	130	nS	
Q _g	Total Gate Charge		39	45	nC	V _{DS} =48V V _{GS} =10V I _D =50A*
Q _{gs}	Gate-Source Charge		9.5		nC	
Q _{gd}	Gate-Drain Charge		13		nC	
I _S	Continuous Source Current			50	A	I _S =50A, V _{GS} =0
V _{SD}	Diode Forward Voltage			1.5	V	
R _{th(j-c)}	Thermal Resistance, Junction-to-Case			1.15	°C/W	

*Pulse Test: Pulse Width ≤ 300 μ s, Duty Cycle ≤ 2%



50A 60V N Channel Mosfet

Fig 1. On-State Characteristics

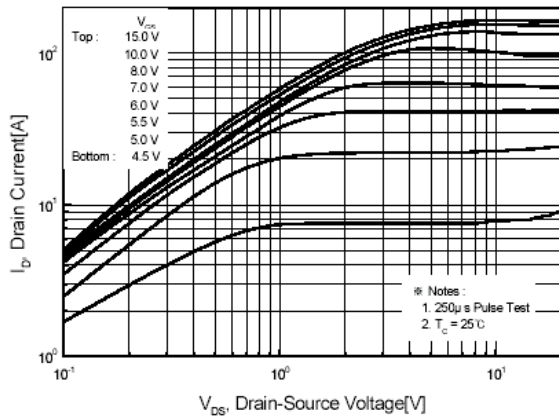


Fig 2. Transfer Characteristics

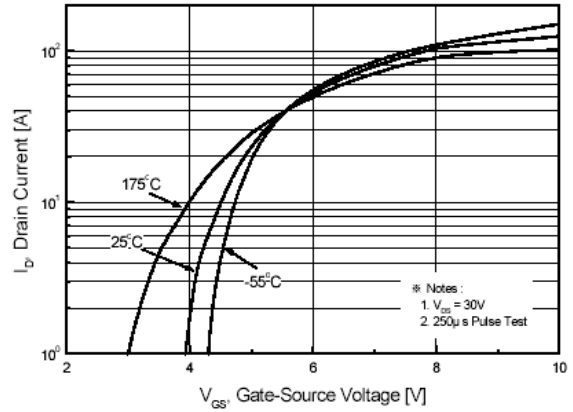


Fig 3. On Resistance Variation vs. Drain Current and Gate Voltage

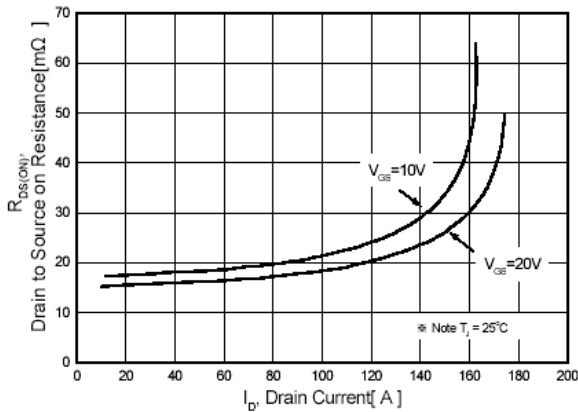


Fig 4. On State Current vs. Allowable Case Temperature

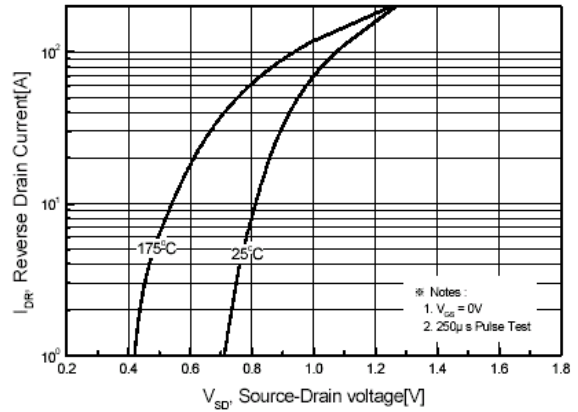


Fig 5. Capacitance Characteristics

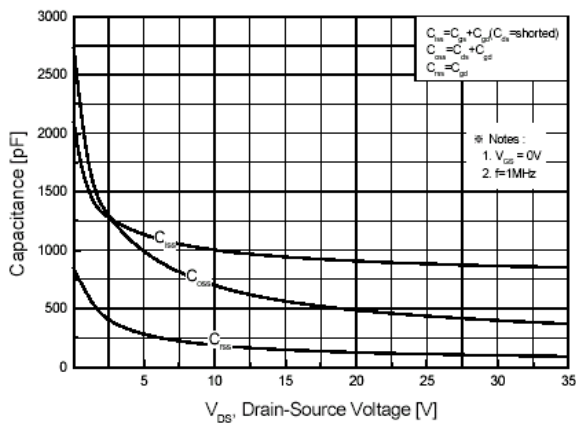


Fig 6. Gate Charge Characteristics

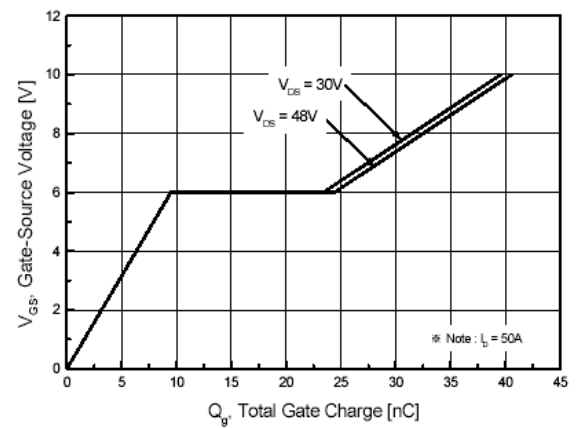


Fig 7. Breakdown Voltage Variation vs. Junction Temperature

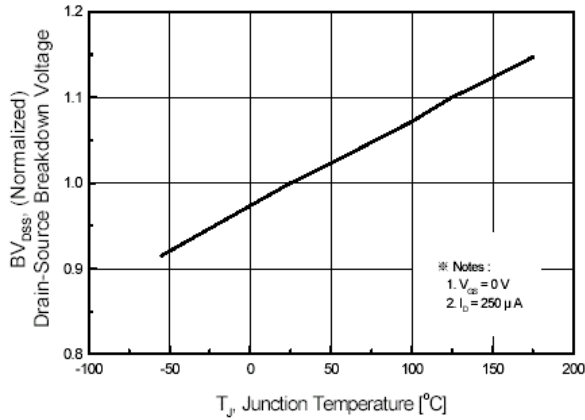


Fig 8. On-Resistance Variation vs. Junction Temperature

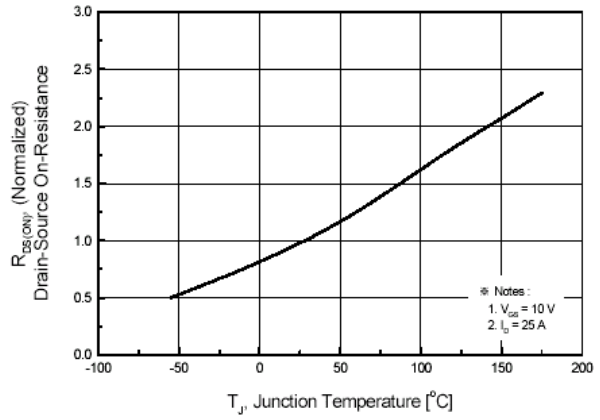


Fig 9. Maximum Safe Operating Area

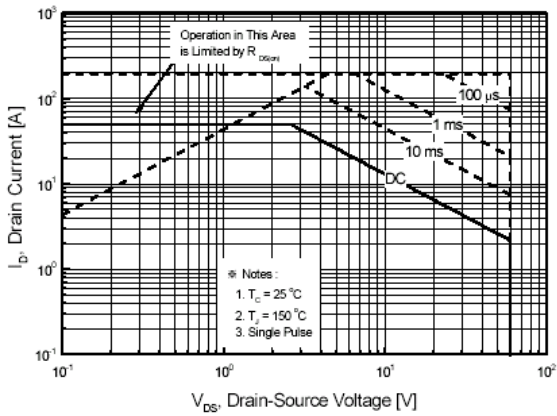


Fig 10. Maximum Drain Current vs. Case Temperature

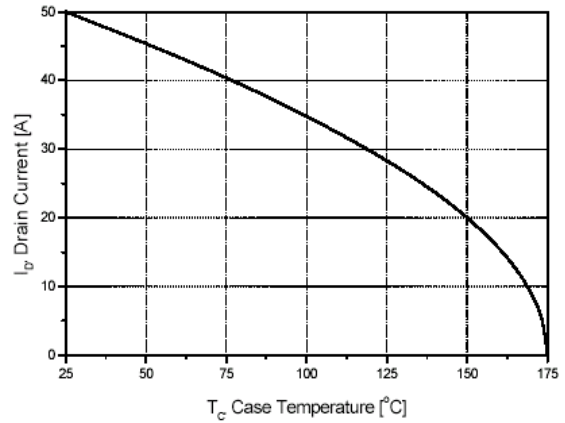


Fig 11. Transient Thermal Response Curve

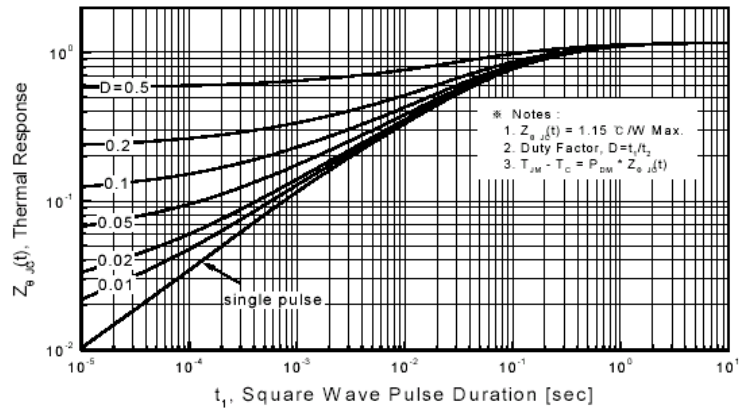


Fig. 12. Gate Charge Test Circuit & Waveforms

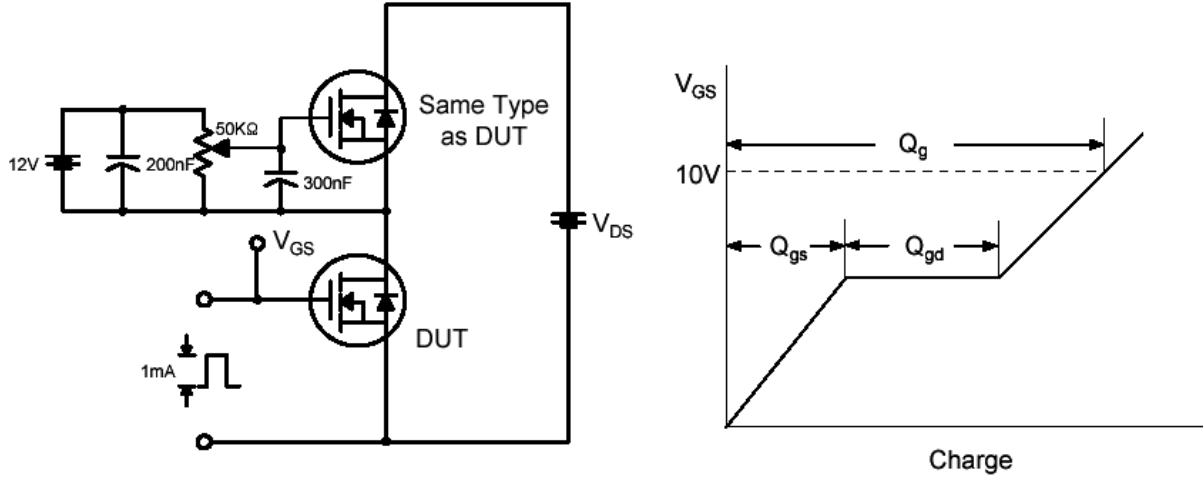


Fig 13. Switching Time Test Circuit & Waveforms

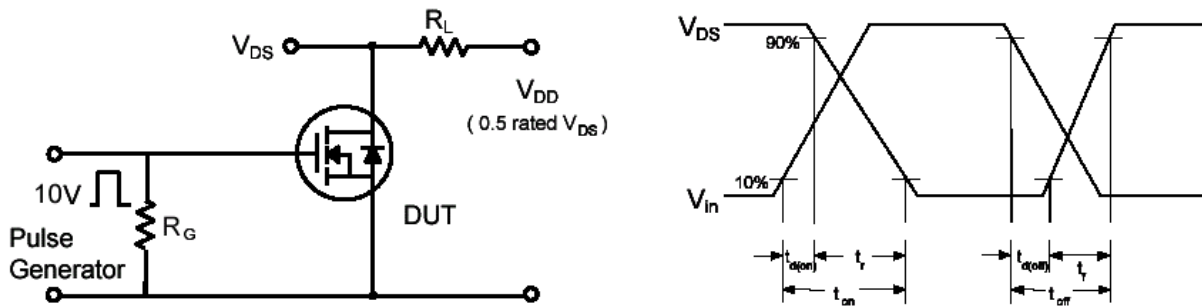


Fig 14. Unclamped Inductive Switching Test Circuit & Waveforms

