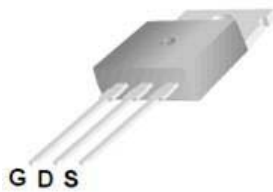


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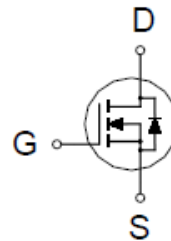
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	26m Ω @ $V_{GS} = 10V$	50A



TO-220



100% UIS tested

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	50	A
	$T_C = 100\text{ }^\circ\text{C}$		31	
Pulsed Drain Current ¹		I_{DM}	200	
Avalanche Current		I_{AS}	77	
Avalanche Energy	$L = 0.3\text{mH}$	E_{AS}	900	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	128	W
	$T_C = 100\text{ }^\circ\text{C}$		51	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$
Lead Temperature ($1/16$ " from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		0.97	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	
Case-to-Heatsink	$R_{\theta CS}$	0.5		

¹Pulse width limited by maximum junction temperature.

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ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.5	2.3	4.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±250	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 80V, V _{GS} = 0V			1	μA
		V _{DS} = 80V, V _{GS} = 0V, T _J = 125 °C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	50			A
Drain-Source On-State	R _{DS(ON)}	V _{GS} = 10V, I _D = 25A		21	26	mΩ
Forward Transconductance ¹	g _{fs}	V _{DS} = 40V, I _D = 25A		38		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		4900		pF
Output Capacitance	C _{oss}			887		
Reverse Transfer Capacitance	C _{riss}			186		
Total Gate Charge ²	Q _g	V _{DS} = 80V, V _{GS} = 10V, I _D = 50A		79		nC
Gate-Source Charge ²	Q _{gs}			31		
Gate-Drain Charge ²	Q _{gd}			30		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 50V, I _D ≅ 50A, V _{GS} = 10V, R _{GEN} = 25Ω		25		nS
Rise Time ²	t _r			250		
Turn-Off Delay Time ²	t _{d(off)}			110		
Fall Time ²	t _f			140		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				50	A
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			1.5	V
Reverse Recovery Time	t _{rr}			100		nS
Reverse Recovery Charge	Q _{rr}			380		nC

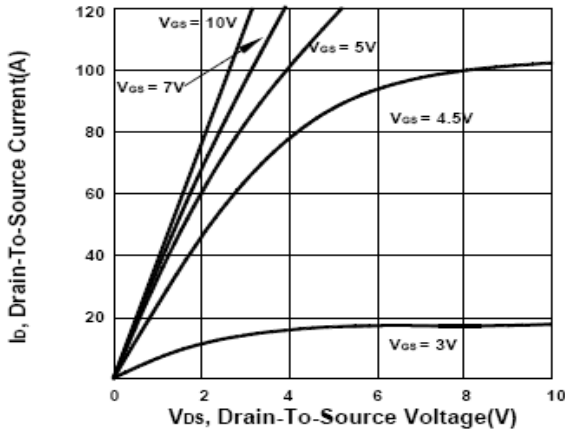
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

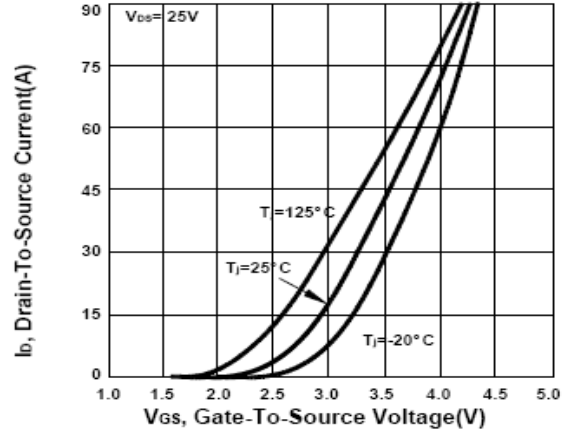
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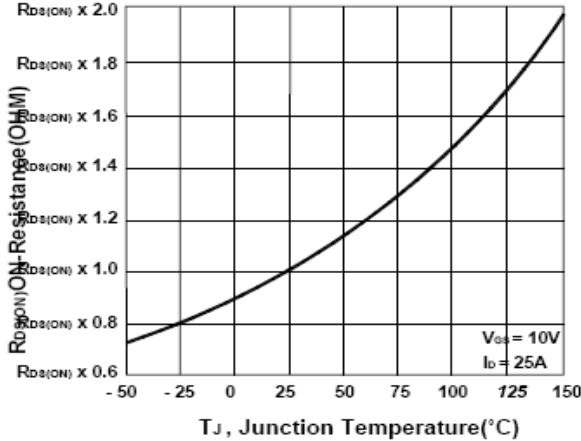
Output Characteristics



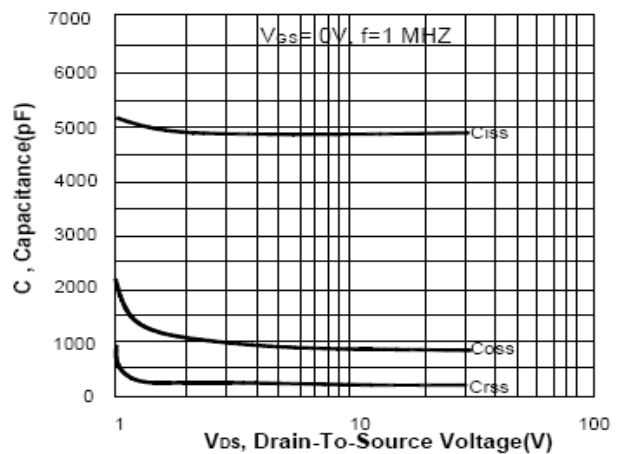
Transfer Characteristics



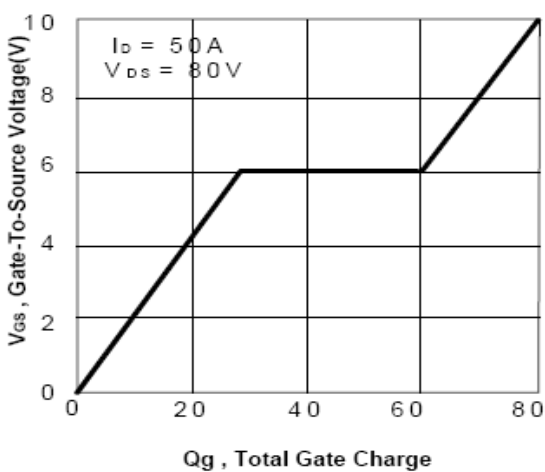
On-Resistance VS Temperature



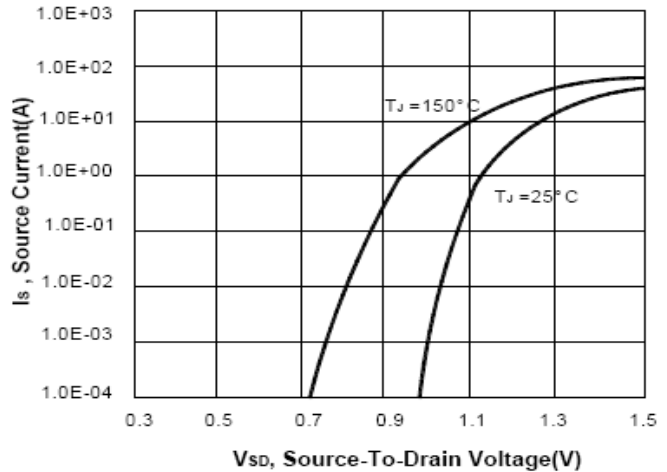
Capacitance Characteristic



Gate charge Characteristics



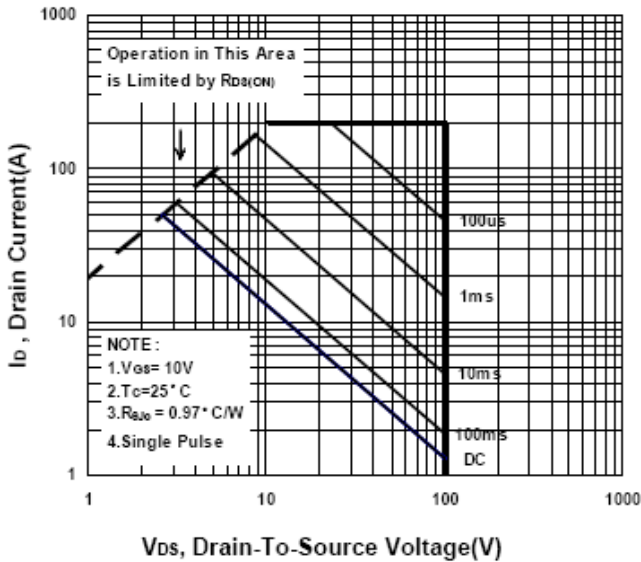
Source-Drain Diode Forward Voltage



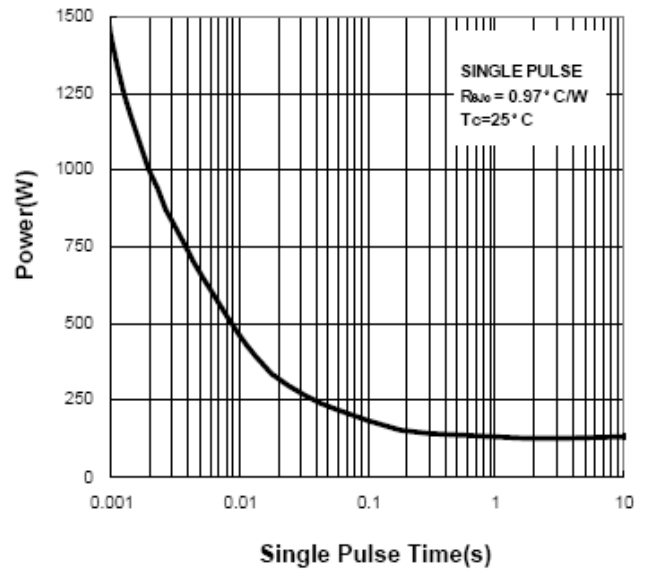
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Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

