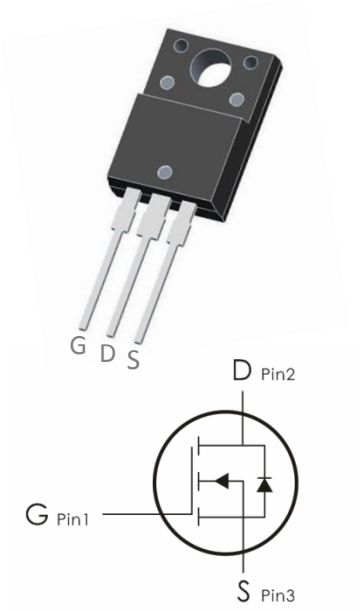
Description：

This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features：

1) V_{DS}=500V,I_D=5A,$R_{DS(ON)}$<1.4Ω @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	500	V
V_{GS}	Gate-Source Voltage	±30	V
I_D	Continuous Drain Current- T_C=25℃	5	A
	Continuous Drain Current-T_C=100℃	2.2	
E_{AS}	Single Pulse Avalanche Energy[1]	270	mJ
P_D	Power Dissipation	35	W
I_{AR}	valanche Current[2]	5	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	3.45	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	110	

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Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	500	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=500V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±30V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	2	---	4	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=10V,I_D=2.5A	---	---	1.4	Ω
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25, V_{GS}=0V, f=1MHz	---	800	1000	pF
C_{oss}	Output Capacitance		---	75	95	
C_{rss}	Reverse Transfer Capacitance		---	8.5	11	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=250v.I_D=5A R_{GEN}=25Ω. (Note3,4)	---	13	35	ns
t_r	Rise Time		---	55	120	ns
$t_{d(off)}$	Turn-Off Delay Time		---	25	60	ns
t_f	Fall Time		---	35	80	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=400V I_D=5A. (Note3,4)	---	13	17	nC
Q_{gs}	Gate-Source Charge		---	3.4	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	6.4	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_D=5A	---	---	1.5	V
Is	Max. Diode Forward Current	---	---	---	5	A
Ism	Max. Pulsed Forward Curent		---	---	20	A

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Trr	Reverse Recovery Time	I_S=5A,V_{GS} =0V diF/dt=100A/μs (Note3)	---	215	---	Ns
qrr	Reverse Recovery Charge		---	1.26	---	nc

Notes : 1, L=27mH, IAS=5A, VDD=50V, RG=25Ω, Starting TJ =25°C
2, Repetitive Rating : Pulse width limited by maximum junction temperature
3, Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
4, Essentially Independent of Operating Temperature

Typical Characteristics: (T_C=25℃ unless otherwise noted)

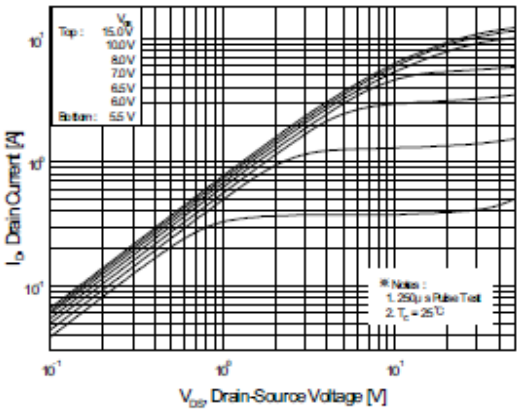


Figure 1. On-Region Characteristics

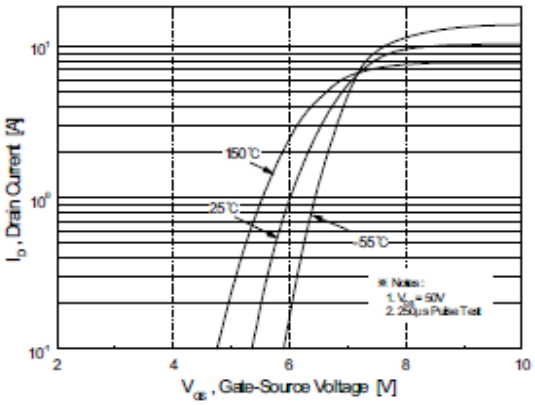


Figure 2. Transfer Characteristics

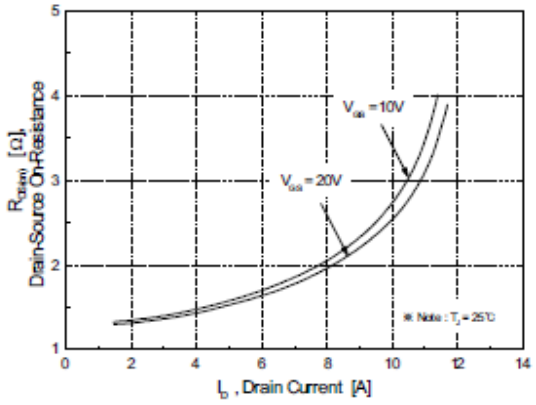


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

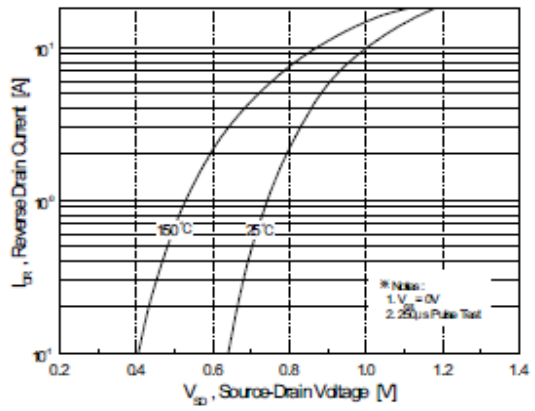


Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

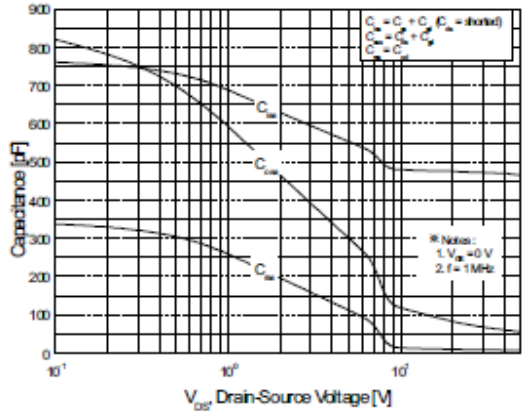


Figure 5. Capacitance Characteristics

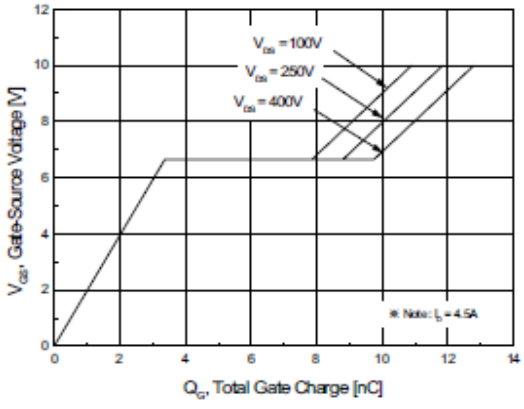


Figure 6. Gate Charge Characteristics

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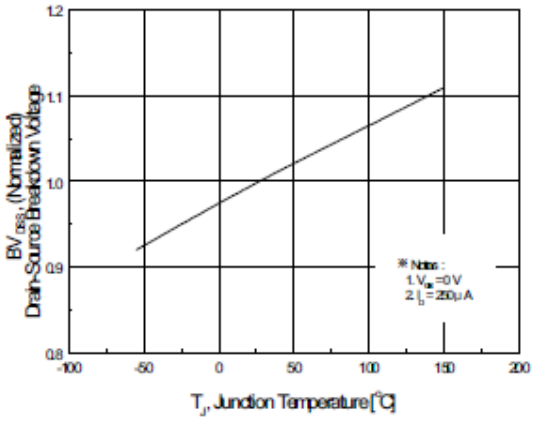


Figure 7. Breakdown Voltage Variation vs. Temperature

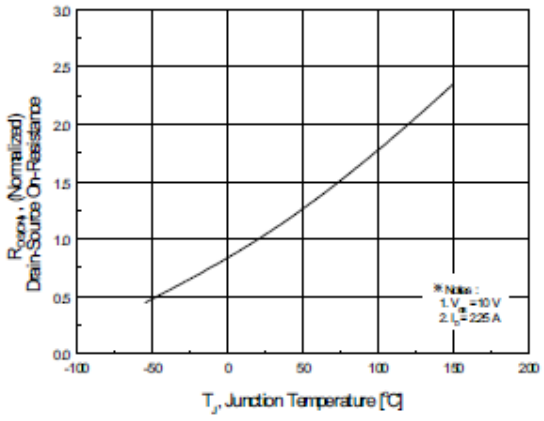


Figure 8. On-Resistance Variation vs. Temperature

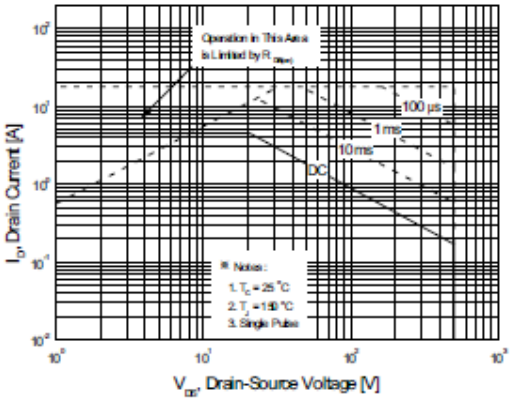


Figure 9. Maximum Safe Operating Area

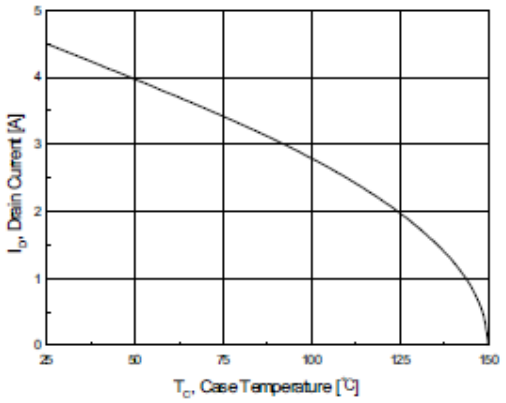


Figure 10. Maximum Drain Current vs. Case Temperature

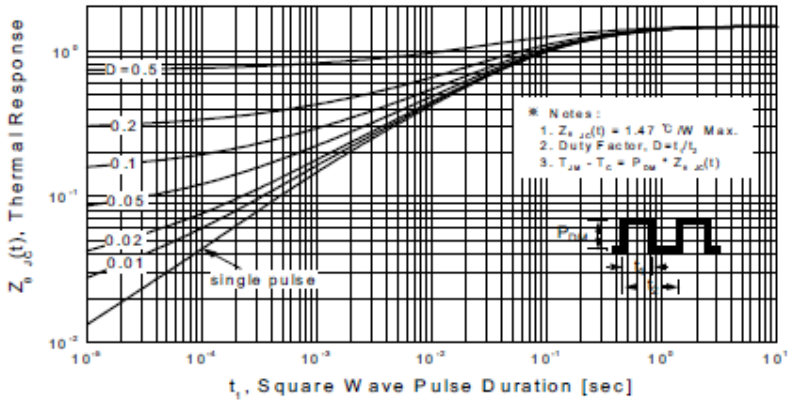


Figure 11. Transient Thermal Response Curve

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