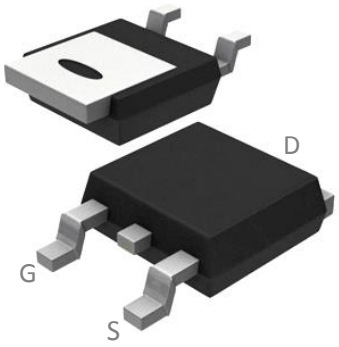
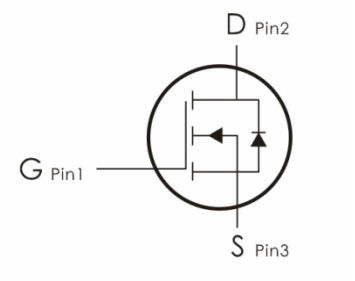
Description：

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}=60V,I_D=60A,$R_{DS(ON)}$<12mΩ @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra $R_{DS(ON)}$.
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	60	V
V_{GS}	Gate-Source Voltage	±25	V
I_D	Continuous Drain Current-T_C=25℃	60	A
	Continuous Drain Current-T_C=100℃	31	
	Pulsed Drain Current[1]	180	
E_{AS}	Single Pulse Avalanche Energy[2]	196	mJ
P_D	Power Dissipation,T_C=25℃	68	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +175	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case[1]	2.2	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient[1]	---	

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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	60	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=60V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±25V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	---	3	V
$R_{DS(ON)}$	Drain-Source On Resistance[2]	V_{GS}=10V,I_D=40A	---	10.5	12	mΩ
		V_{GS}=4.5V,I_D=0A	---	---	---	
G_{FS}	Forward Transconductance	V_{DS}=10V, I_D=40A	18	---	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	1659	---	pF
C_{oss}	Output Capacitance		---	180	---	
C_{rss}	Reverse Transfer Capacitance		---	128	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time[3]	V_{DD}=30V, I_D=0A, V_{GS}=10V,R_{GEN}=3Ω	---	15	---	ns
t_r	Rise Time[2,3]		---	25	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	53	---	ns
t_f	Fall Time[2,3]		---	23	---	ns
Q_g	Total Gate Charge[3]	V_{GS}=10V, V_{DS}=30V, I_D=15A	---	50	---	nC
Q_{gs}	Gate-Source Charge		---	12	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	23	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage[3]	V_{GS}=0V,I_S=1A	---	0.89	0.99	V

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Ls	Continuous Source Current	---	45	---	A
Ism	Pulsed Source Current		180	---	A
trr	Reverse Recovery Time[3]	T_J=25℃,I_F=15A di/dt=100A/μs	24	---	Ns
qrr	Reverse Recovery Charge[3]		30	---	nc

Notes:

1.Repetitive Rating: Pulse width limited by maximum junction temperature

2.EAS condition:T_J=25℃,V_{DD}=30V,V_G=10V, R_G=25Ω

3 Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 1.5%, Starting T_J=25℃

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

Figure1. Output Characteristics

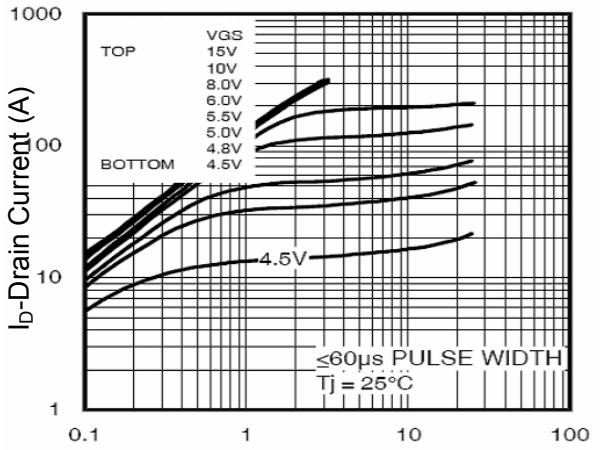

Figure2. Transfer Characteristics

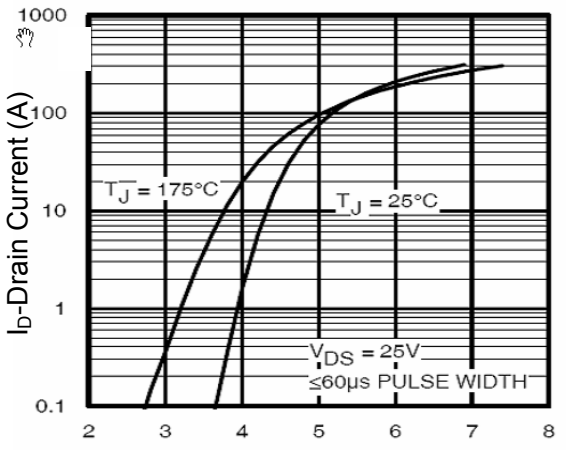

Figure3. BVDSS vs Junction Temperature

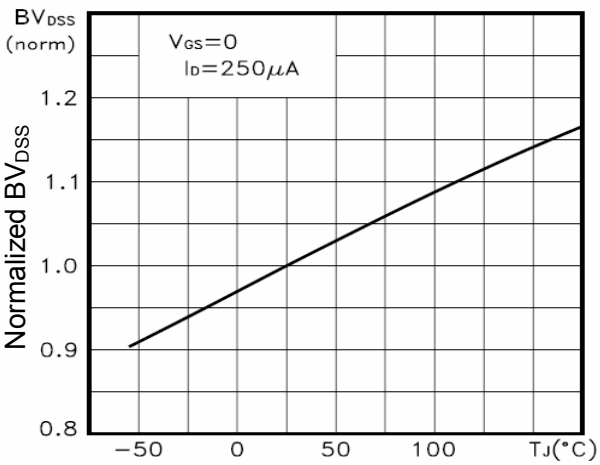

Figure4. ID vs Junction Temperature

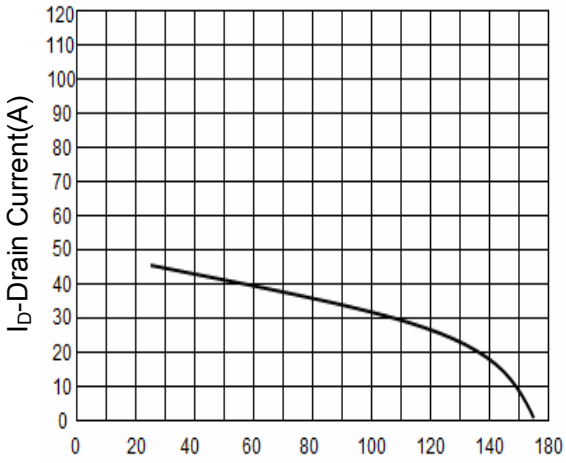

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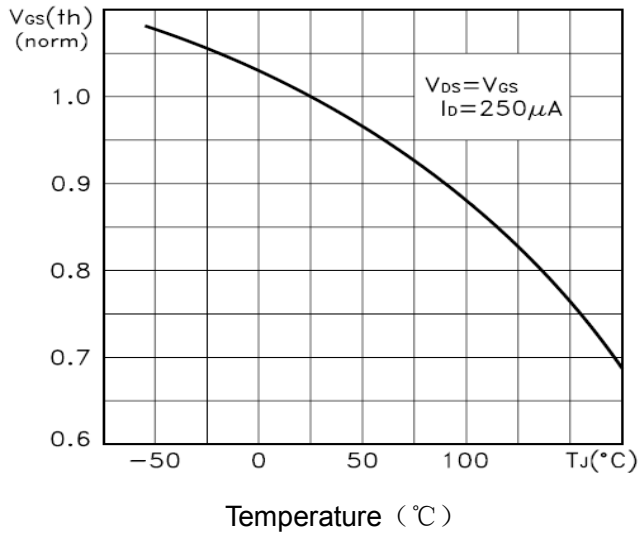
Figure5. VGS(th) vs Junction Temperature



Temperature（℃）

Figure6. Rdson Vs Junction Temperature

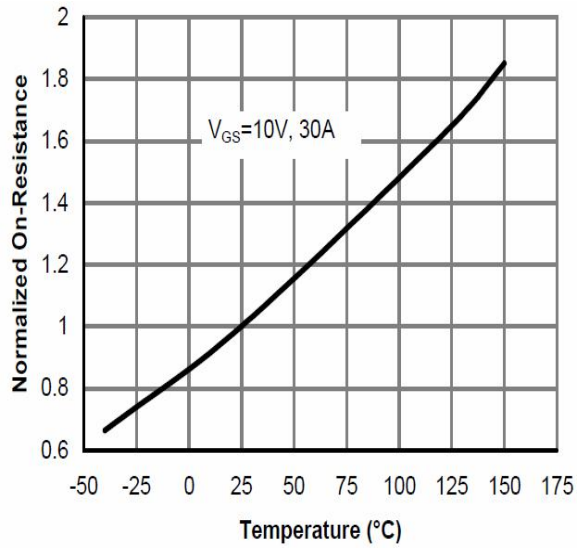
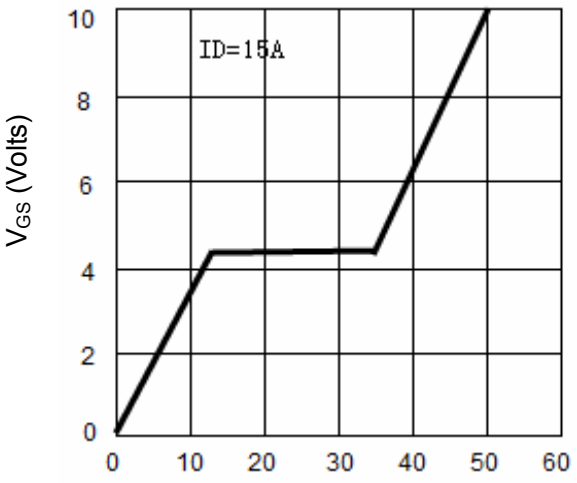
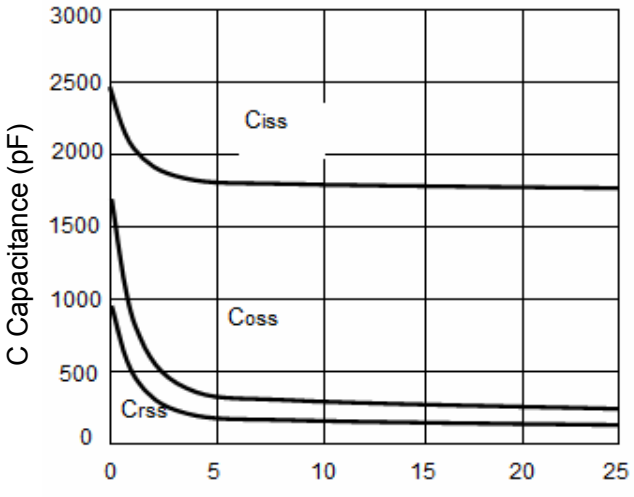


Figure7. Gate Charge



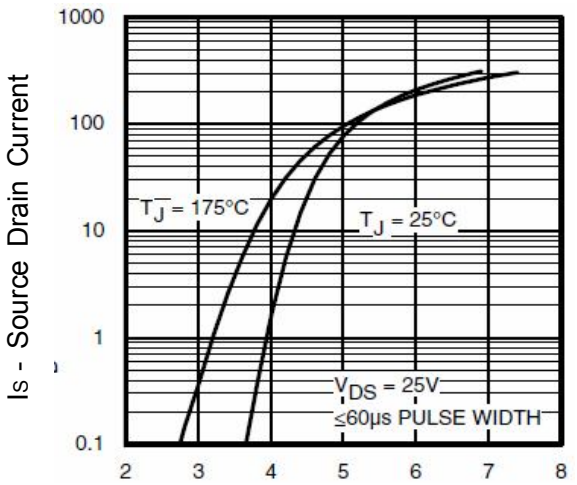
Qg Gate Charge (nC)

Figure8. Capacitance vs Vds



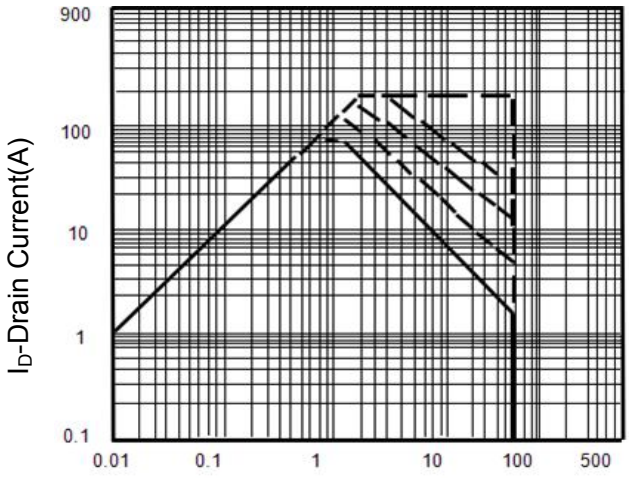
V_{DS} Drain-Source Voltage (V)

Figure9. Source- Drain Diode Forward



V_{SD} Source-Drain Voltage (V)

Figure10. Safe Operation Area



V_{DS} Drain-Source Voltage (V)

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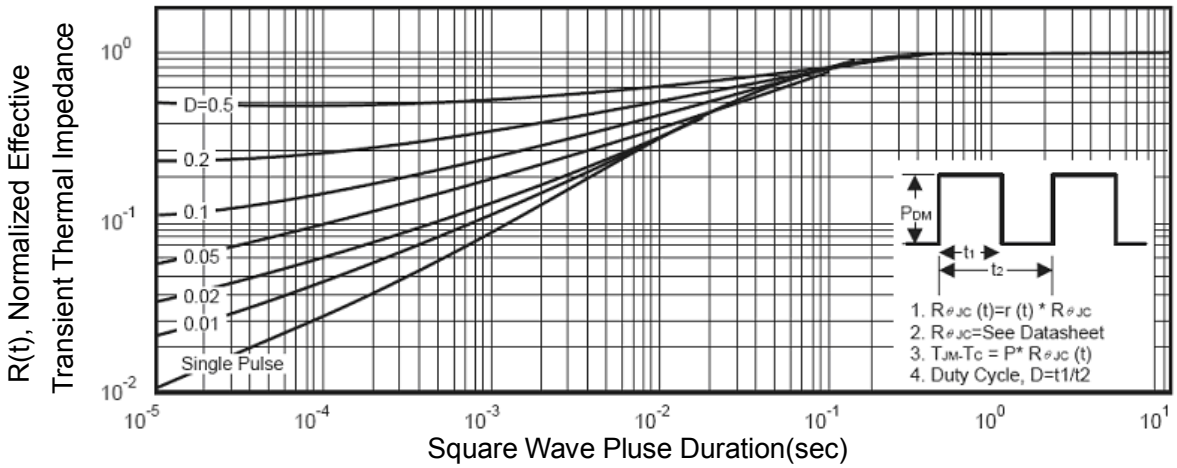
Figure11. Normalized Maximum Transient Thermal Impedance



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