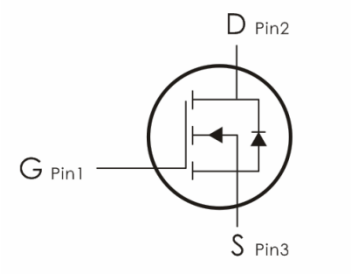
Description：

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=45A,$R_{DS(ON)}$<15mΩ @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-TC=25℃	45	A
	Continuous Drain Current-TC=100℃	32	
	Pulsed Drain Current[1]	180	
E_{AS}	Single Pulse Avalanche Energy[2]	182	mJ
P_D	Power Dissipation(TC=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	2.2	℃/W

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,(TC=25℃)	---	---	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	2	---	4	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=10V,I_D=40A	---	11.5	15	mΩ
G_{FS}	Forward Transconductance	V_{DS}=10V, I_D=15A	18	---	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	1717	---	pF
C_{oss}	Output Capacitance		---	180	---	
C_{rss}	Reverse Transfer Capacitance		---	140	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=30V,R_L=2.5Ω V_{GS}=10V,R_G=3Ω	---	15	---	ns
t_r	Rise Time		---	25	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	50	---	ns
t_f	Fall Time		---	23	---	ns
Q_g	Total Gate Charge	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[1]	T_J=25℃,I_{SD}=1A,V_{GS}=0V	---	0.85	0.99	V

Notes:

1.Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 1.5%, Starting TJ=25℃.

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

Figure1. Output Characteristics

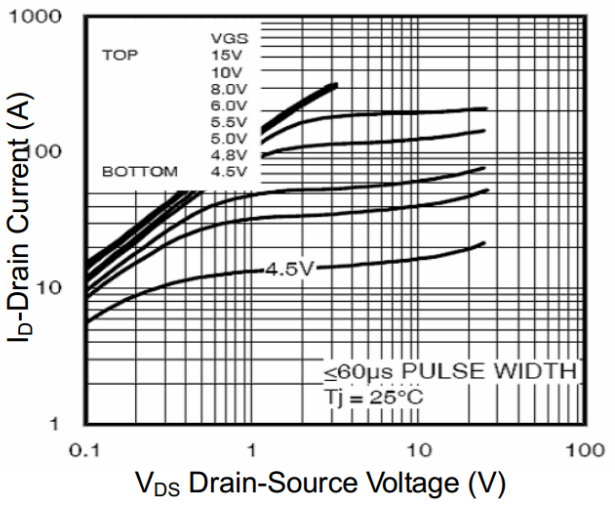


Figure2. Transfer Characteristics

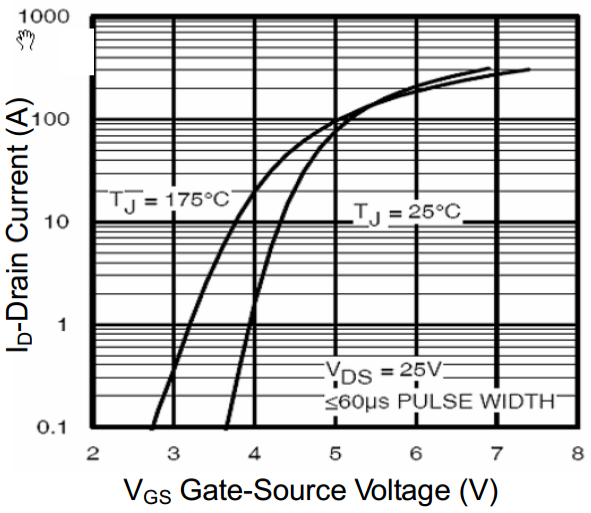


Figure3. BVDSS vs Junction Temperature

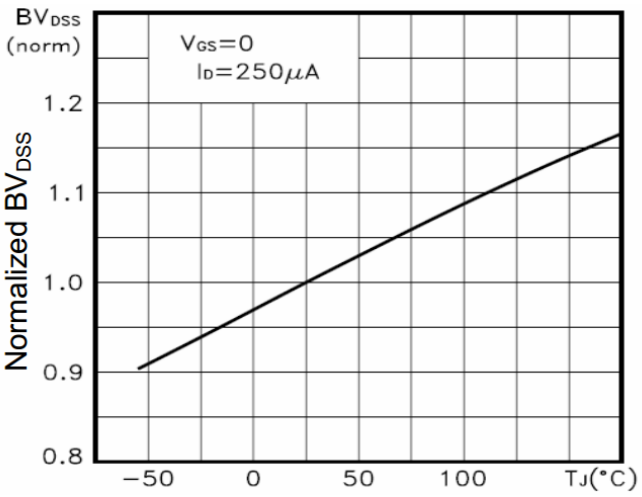


Figure4. ID vs Junction Temperature

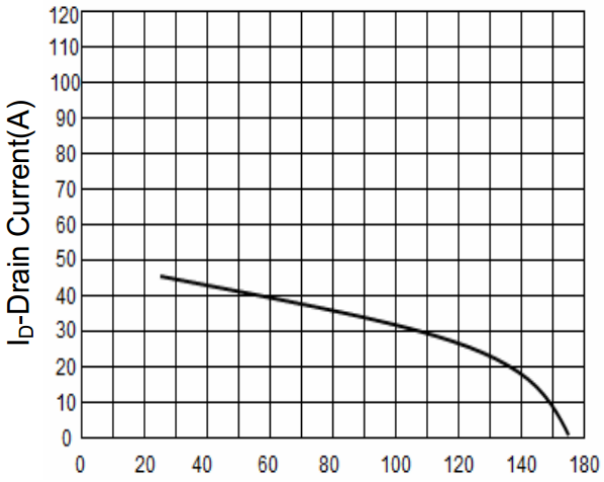


Figure5. VGS(th) vs Junction Temperature

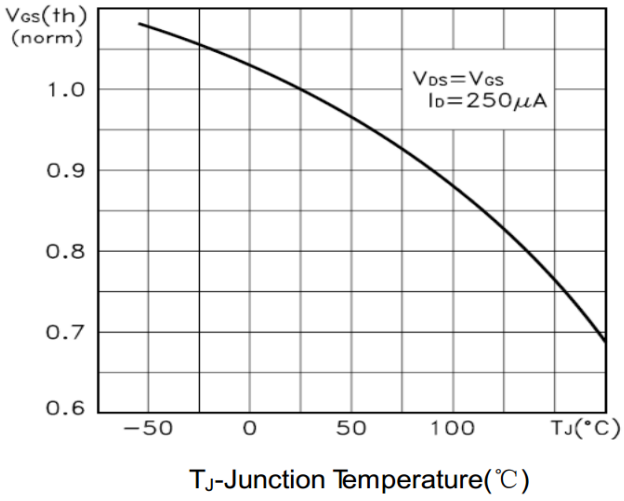


Figure6. Rdson Vs Junction Temperature

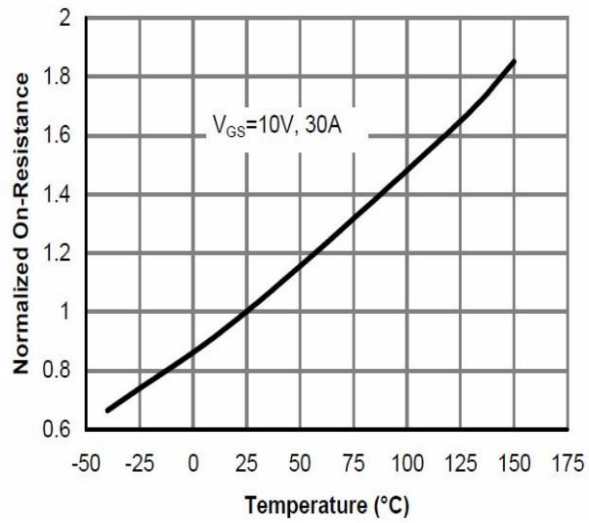


Figure7. Gate Charge

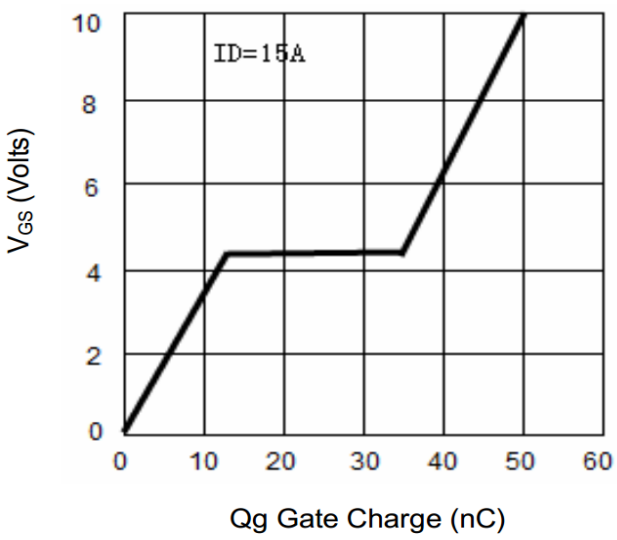


Figure8. Capacitance vs Vds

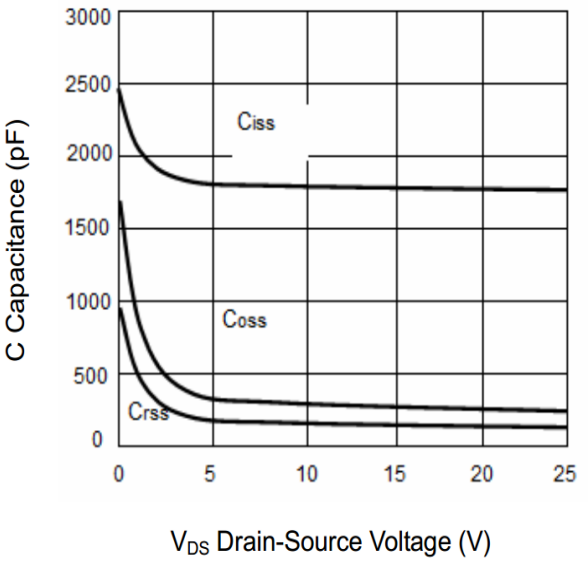


Figure9. Source- Drain Diode Forward

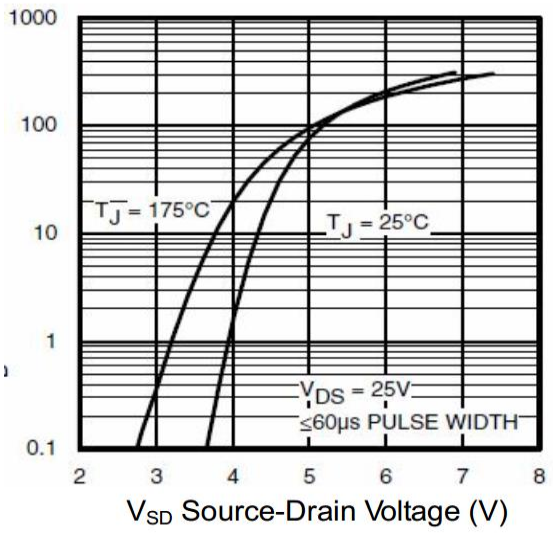


Figure10. Safe Operation Area

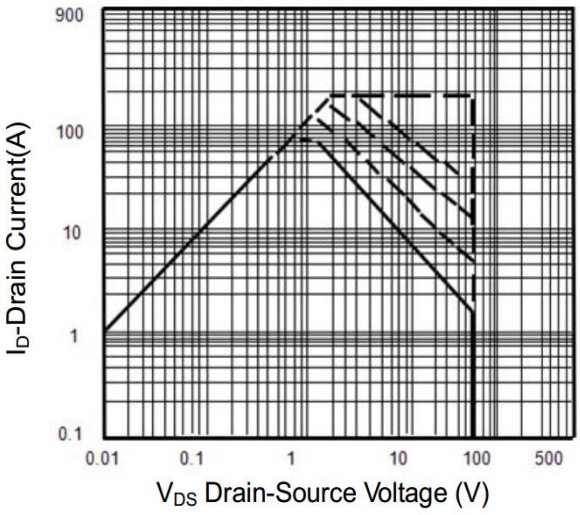


Figure11. Normalized Maximum Transient Thermal Impedance