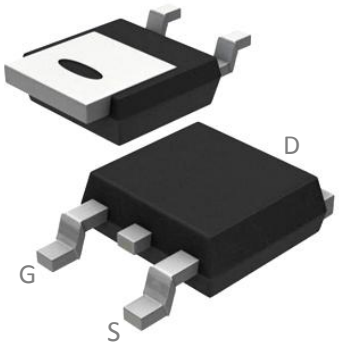
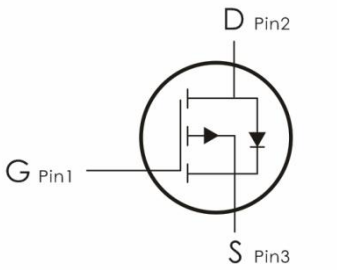
Description：

This P-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}=-30V,I_D=-57A,$R_{DS(ON)}$<14mΩ @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	-30	V
V_{GS}	Gate-Source Voltage	±25	V
I_D	Continuous Drain Current-T_C=25℃	-57	A
	Continuous Drain Current-T_C=100℃	-38	
$I_{DM\ (pluse)}$	Drain Current – Pulsed(Note 1)	-220	A
P_D	Power Dissipation-T_C=25℃	75	W
	Power Dissipation-T_C=100℃	37.5	
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	℃/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	-30	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=-30V	---	---	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	-1.6	-2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-20A	---	9.5	14	mΩ
		V_{GS}=-4.5V,I_D=-15A	---	13	21	
G_{FS}	Forward Transconductance	V_{DS}=-5V,I_D=-6A	10	22	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-15V, V_{GS}=0V, f=1MHz	---	2350	---	pF
C_{oss}	Output Capacitance		---	380	---	
C_{rss}	Reverse Transfer Capacitance		---	285	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=-15V, I_D=-1A, R_L=15Ω,R_G=2.5Ω, V_{GS}=-10V	---	11	---	ns
t_r	Rise Time		---	24	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	38	---	ns
t_f	Fall Time		---	10	---	ns
Q_g	Total Gate Charge	V_{DS}=-15V, V_{GS}=-10V, I_D=-12A	---	40	---	nC
Q_{gs}	Gate-Source Charge		---	7.5	---	nC
Q_{gd}	Gate-Drain Charge		---	10	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_S=-6A	---	---	-1.2	V

I_{SD}	Continuous Source Current	---	---	---	-55	A

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

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

Figure1. Power Dissipation

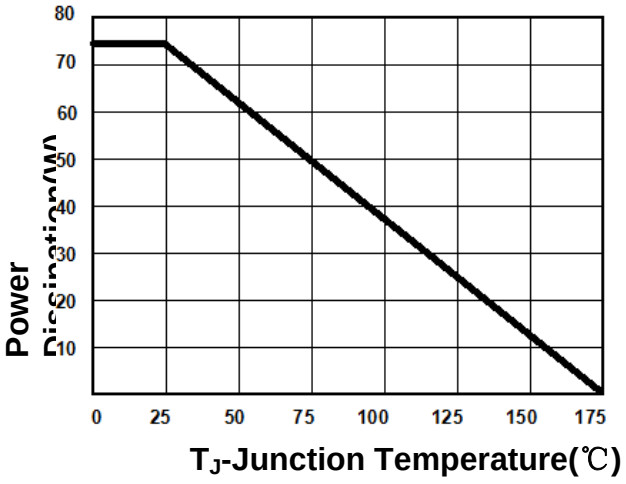


Figure2. Drain Current

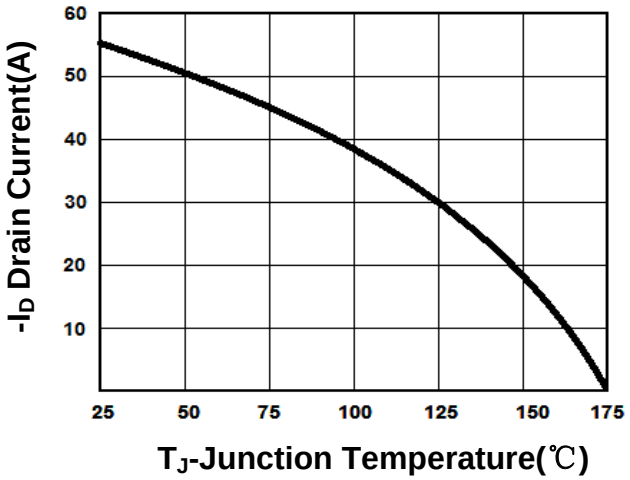


Figure3. Output Characteristics

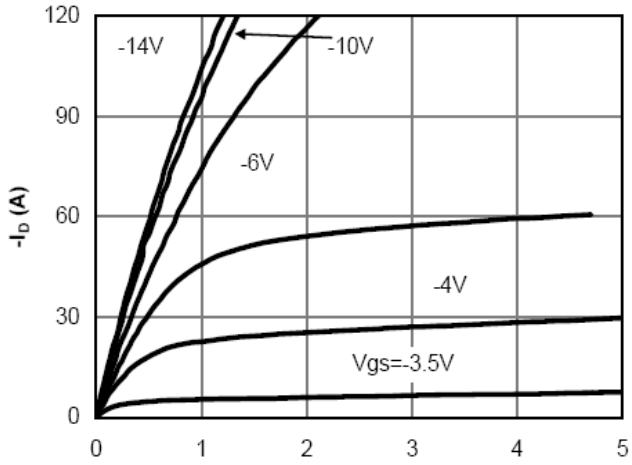


Figure4. Transfer Characteristics

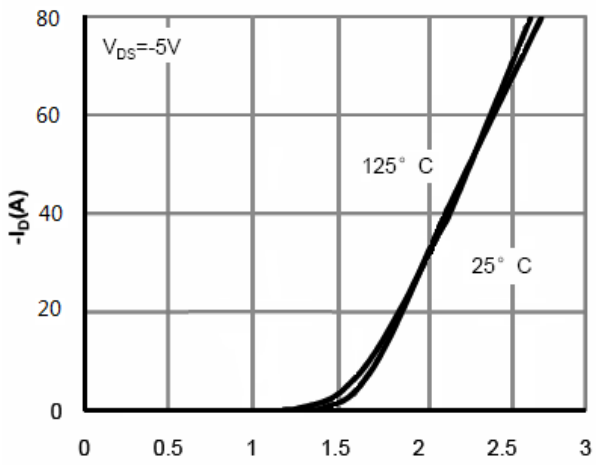


Figure5. Capacitance

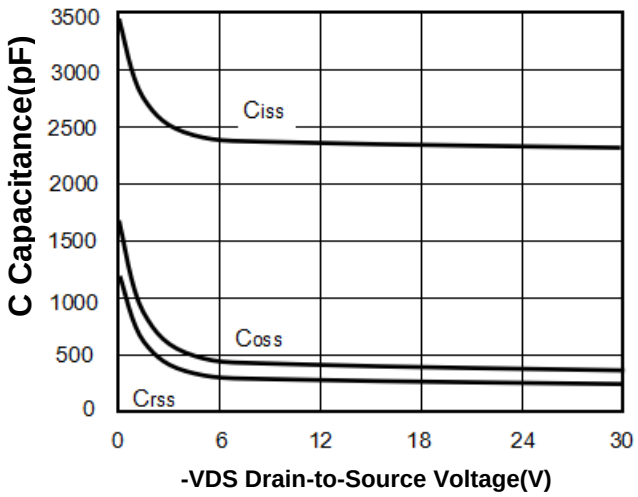


Figure6. $R_{DS(ON)}$ vs Junction Temperature

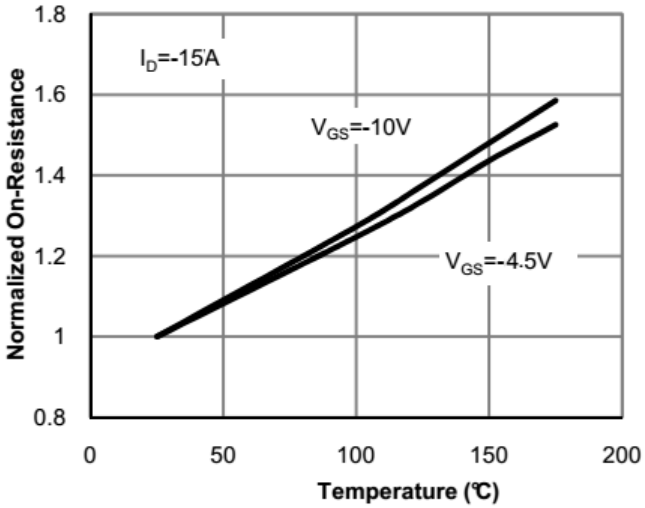


Figure7. Max BV_{DSS} vs Junction Temperature

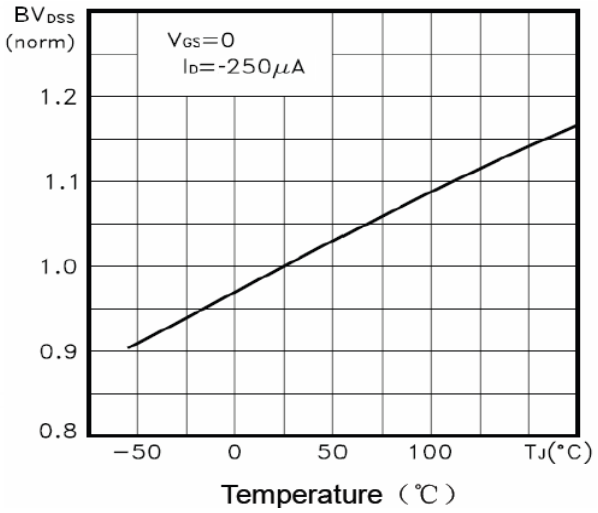


Figure8. $V_{GS(th)}$ vs Junction Temperature

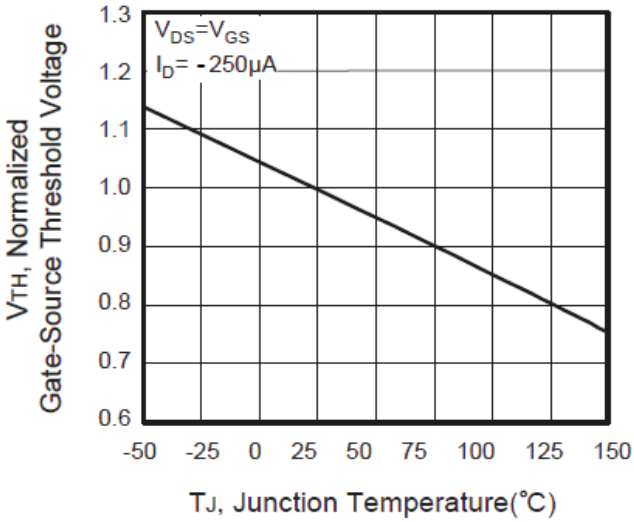


Figure9. Gate Charge Waveforms

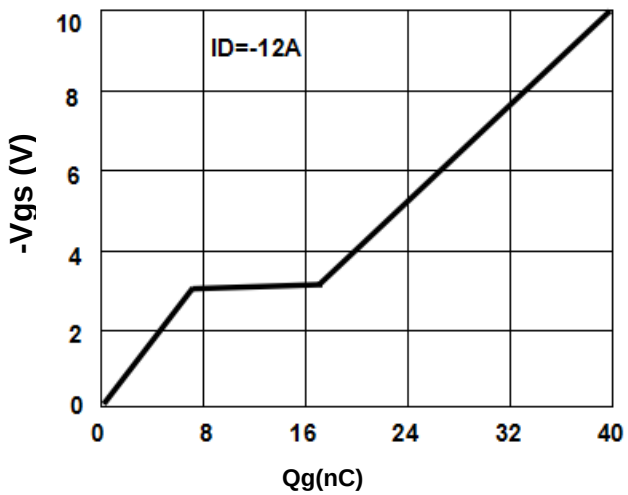


Figure10. Maximum Safe Operating Area

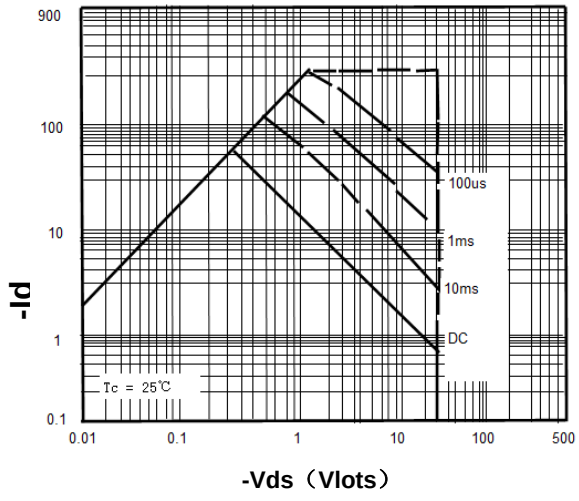


Figure11. Normalized Maximum Transient Thermal Impedance