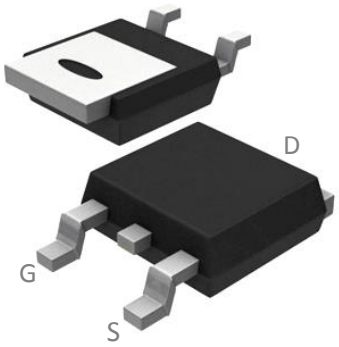
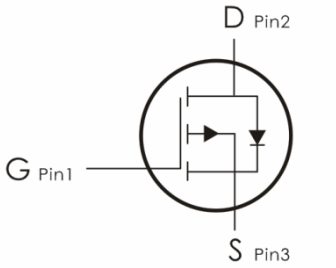
Description：

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}=-40V,I_D=-36A,$R_{DS(ON)}$<21m Ω @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	-40	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	-36	A
	Continuous Drain Current-TC=100℃	-25	
I_{DM}	Pulsed Drain Current[1]	-144	
P_D	Power Dissipation TC=25℃	60	mJ
	Power Dissipation TC=100℃	30	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]	2.5	℃/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	-40	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=-40V	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=-250μA	-1.1	-1.7	-2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-20A	---	15	21	mΩ
		V_{GS}=-4.5V,I_D=-15A	---	21	32	
G_{FS}	Forward Transconductance	V_{DS}=-5V, I_D=-5A	15	---	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-20V, V_{GS}=0V, f=1MHz	---	2050	---	pF
C_{oss}	Output Capacitance		---	260	---	
C_{rss}	Reverse Transfer Capacitance		---	150	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-20V, R_L=1.6Ω R_{GEN}=3Ω, V_{GS}=-10V	---	10	---	ns
t_r	Rise Time		---	24	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	40	---	ns
t_f	Fall Time		---	9	---	ns
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-20V, I_D=-8A	---	45	---	nC
Q_{gs}	Gate-Source Charge		---	6	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	11	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_S=-10A,	---	---	-1.2	V

I_{SD}	Source-Drain Current(Body Diode)		---	---	-36	A

Notes:

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

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

Figure1. Power Dissipation

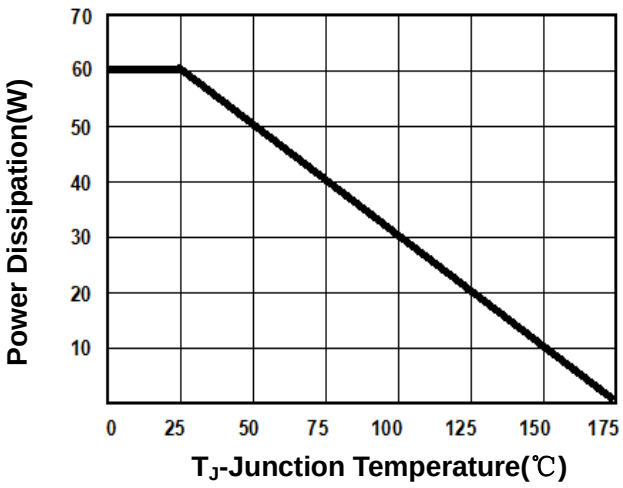


Figure2. Drain Current

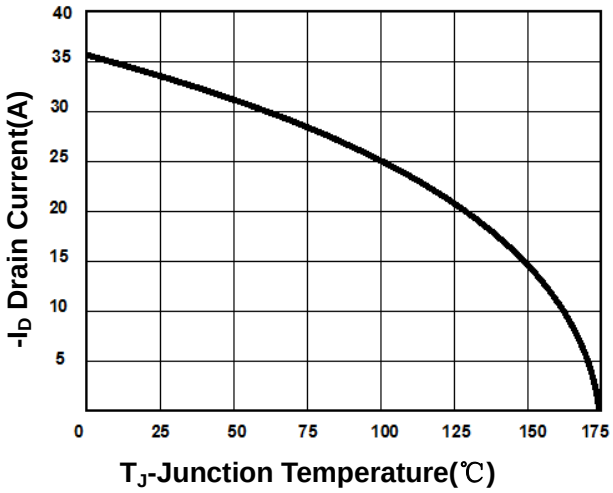


Figure3. Output Characteristics

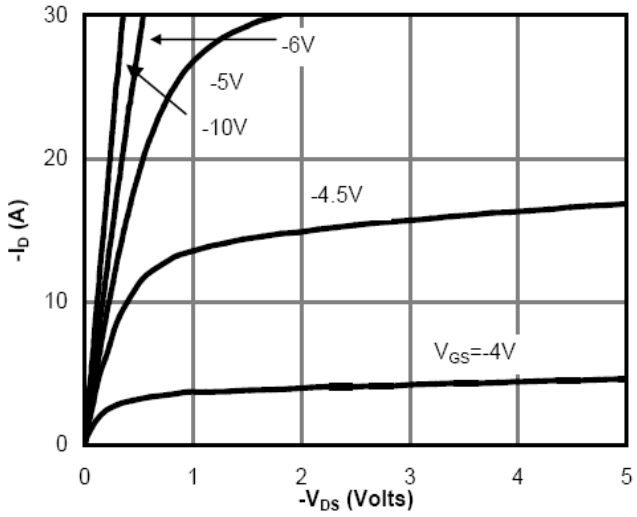


Figure4. Transfer Characteristics

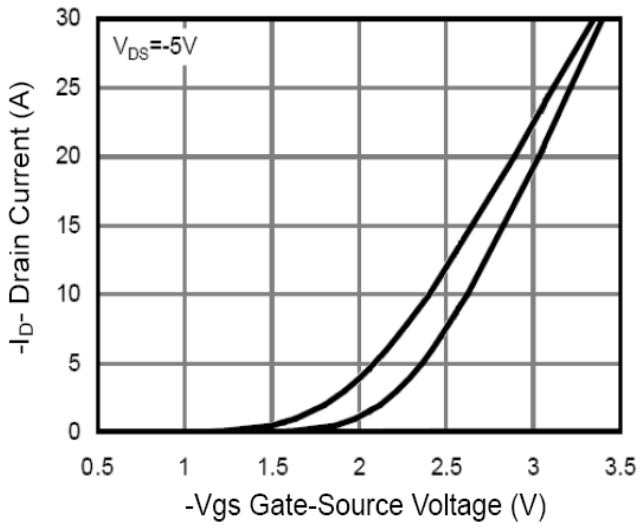


Figure5. Capacitance

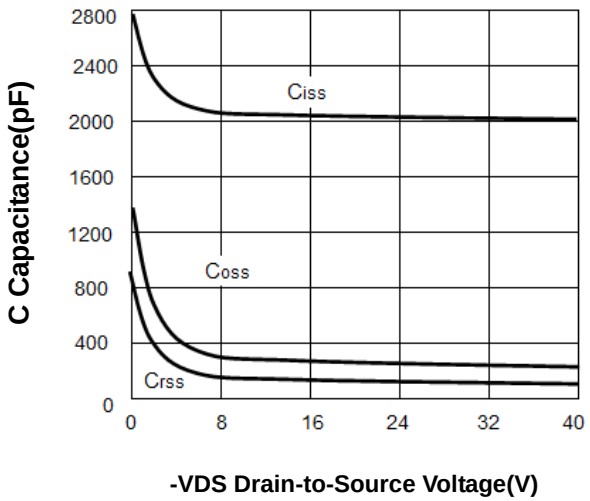


Figure6. $R_{DS(ON)}$ vs Junction Temperature

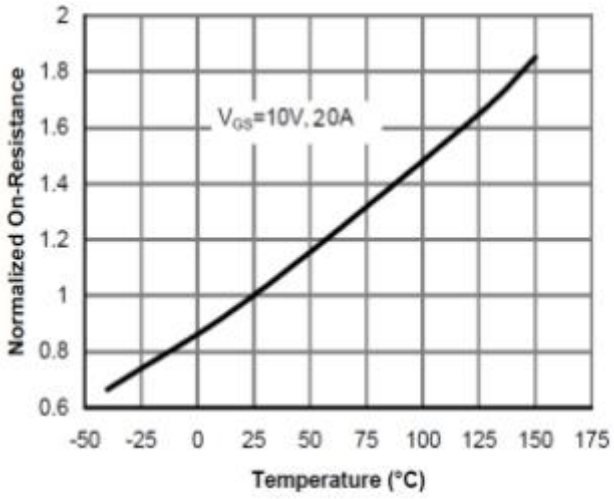


Figure7. $V_{GS(th)}$ vs Junction Temperature

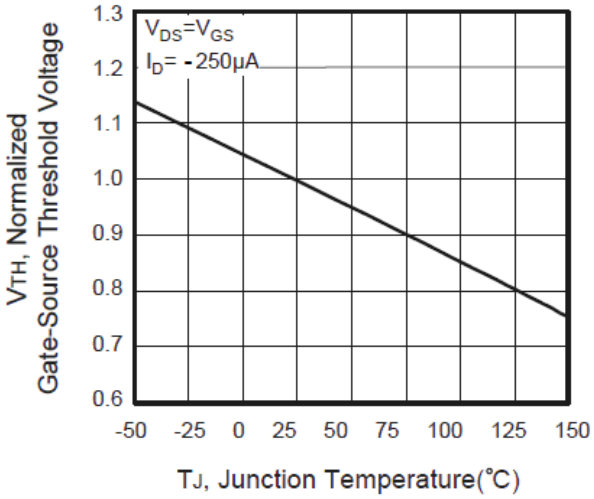


Figure8. Gate Charge Waveforms

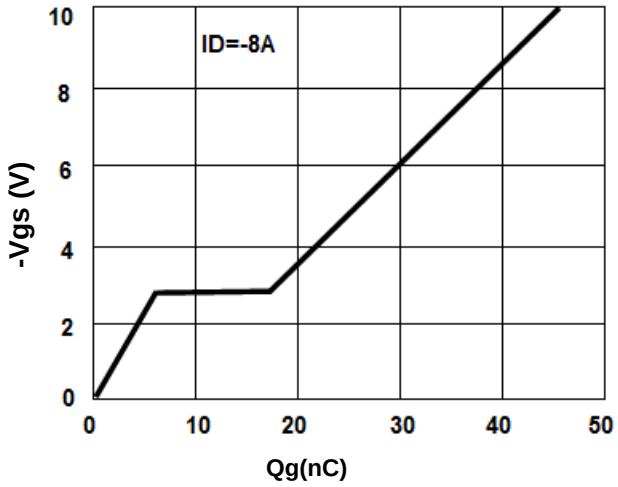


Figure9. Normalized Maximum Transient Thermal Impedance