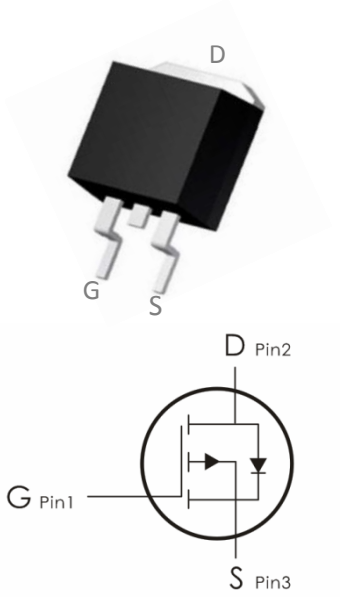
Description：

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=-110A, $R_{DS(ON)}$<5.3mΩ @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-TC=25℃	-110	A
	Continuous Drain Current-TC=100℃	-67	
	Pulsed Drain Current[1]	-360	
E_{AS}	Single Pulse Avalanche Energy	174	mJ
P_D	Power Dissipation(TC=25℃)	101	W
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	1.23	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	62	

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_{DS}=-40V , V_{GS}=0V , T_J=25℃	---	---	-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	-1.2	-1.6	-2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-25A	---	3.8	5.3	mΩ
		V_{GS}=-4.5V,I_D=-15A	---	6.4	8.3	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-20V, V_{GS}=0V, f=1MHz	---	6100	9100	pF
C_{oss}	Output Capacitance		---	600	900	
C_{rss}	Reverse Transfer Capacitance		---	540	810	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time[2,3]	V_{DD}=-20V , V_{GS}=-10V , R_G=6Ω ,I_D=-45A	---	41.6	82	ns
t_r	Rise Time[2,3]		---	12.7	26	ns
$t_{d(off)}$	Turn-Off Delay Time[2,3]		---	308	600	ns
t_f	Fall Time[3,3]		---	70	140	ns
Q_g	Total Gate Charge[2,3]	V_{GS}=-10 V, V_{DS}=-20V, I_D=-45A	---	115	160	nC
Q_{gs}	Gate-Source Charge[2,3]		---	16	25	nC
Q_{gd}	Gate-Drain “Miller” Charge[2,3]		---	25	40	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V , I_S=-1A , T_J=25℃	---	---	-1	V

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

2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%.

3. Essentially independent of operating temperature.

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

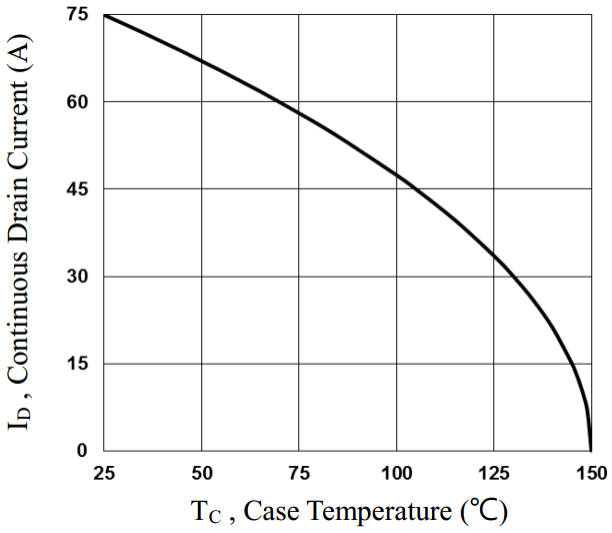


Fig.1 Continuous Drain Current vs. T_C

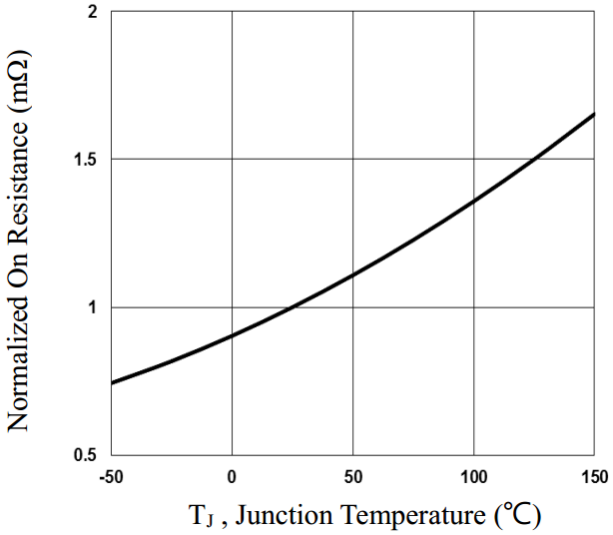


Fig.2 Normalized RDSON vs. T_J

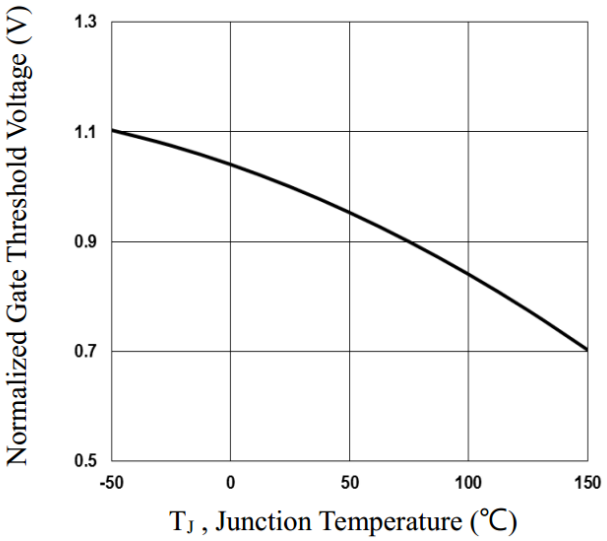


Fig.3 Normalized V_{th} vs. T_J

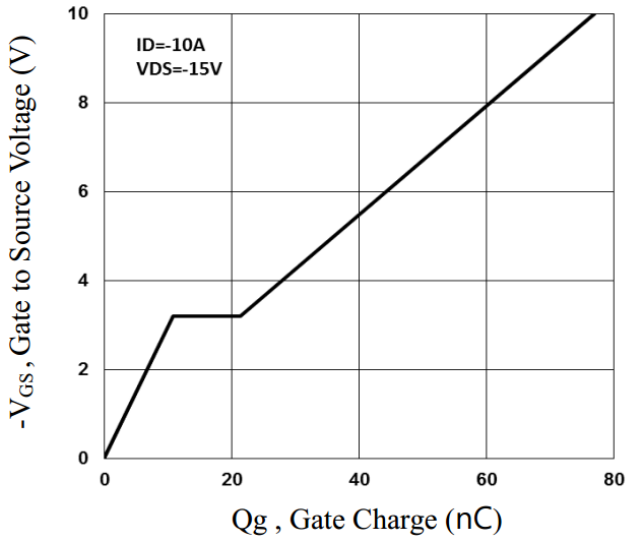


Fig.4 Gate Charge Waveform

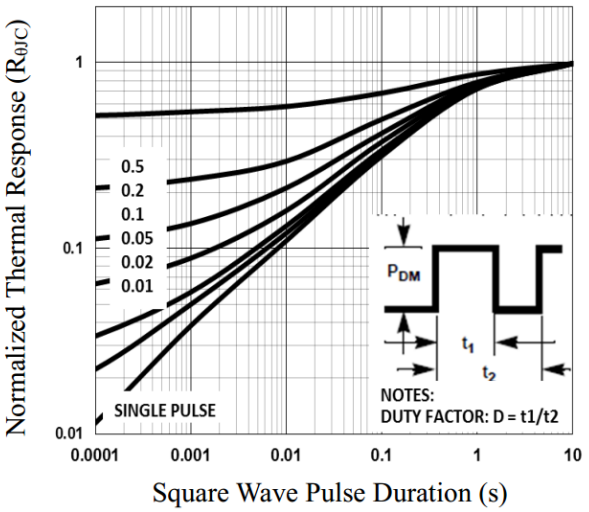


Fig.5 Normalized Transient Impedance

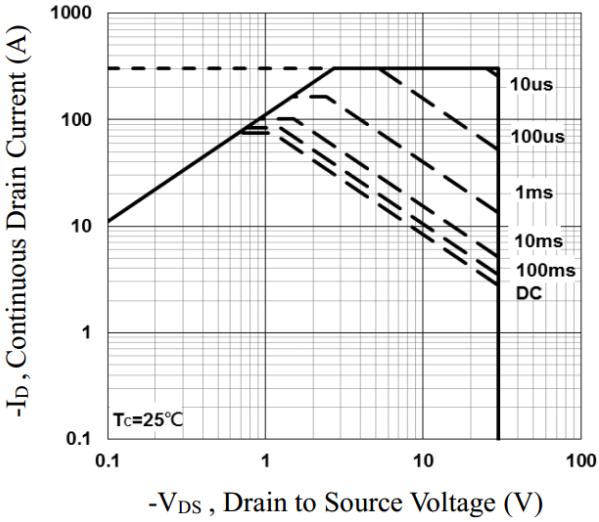


Fig.6 Maximum Safe Operation Area

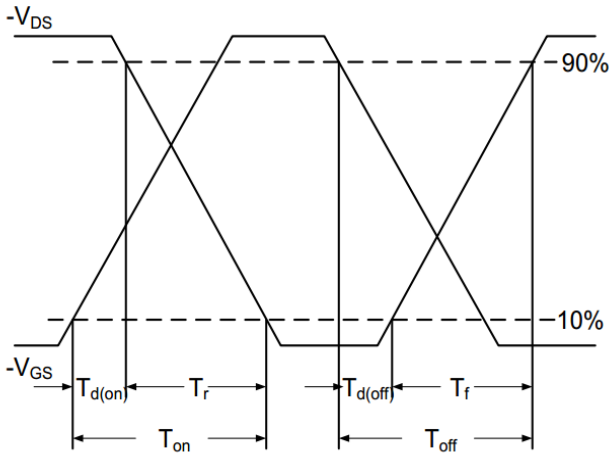


Fig.7 Switching Time Waveform

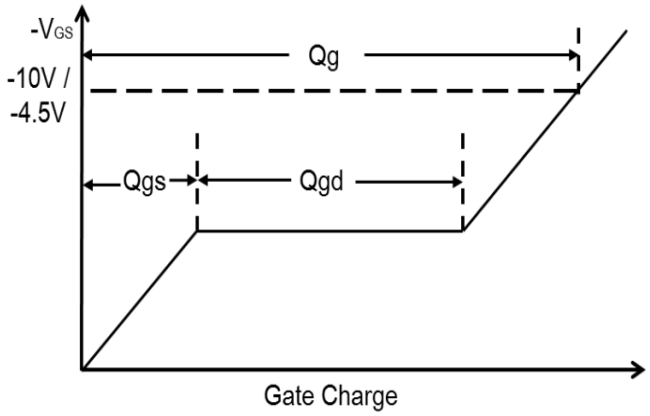


Fig.8 Gate Charge Waveform

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