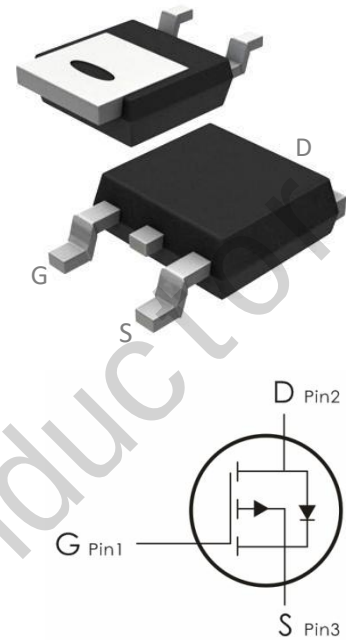


Description:

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) $V_{DS}=-30V, I_D=-100A, R_{DS(on)}<5.3m\Omega$ @ $V_{GS}=-10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Absolute Maximum Ratings: ($T_C=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^{\circ}C$	-100	A
	Continuous Drain Current- $T_C=100^{\circ}C$	-65	A
I_{DM}	Pulsed Drain Current ^{note1}	-400	A
E_{AS}	Single Pulsed Avalanche Energy ^{note2}	225	mJ
P_D	Total Power Dissipation	103	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +175	$^{\circ}C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	1.46	$^{\circ}C/W$

Electrical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	-30	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-30V, T _J =25 °C	---	---	-1	μ A
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 =250 μ A	-1.0	-1.5	-2.5	V
R _{DS(ON)}	Static Drain-Source On-Resistance ^{note3}	V _{GS} =-10V, I _D =-30A	---	4	5.3	m Ω
		V _{GS} =-4.5V, I _D =-20A	---	5.8	8.2	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	---	9200	---	pF
C _{oss}	Output Capacitance		---	980	---	
C _{rss}	Reverse Transfer Capacitance		---	750	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time ^{2,3}	V _{DD} =-15V, I _D =-30A, V _{GS} =-10V, R _G =2.5 Ω	---	13	---	ns
t _r	Rise Time ^{2,3}		---	15	---	ns
t _{d(off)}	Turn-Off Delay Time ^{2,3}		---	65	---	ns
t _f	Fall Time ^{2,3}		---	25	---	ns
Q _g	Total Gate Charge ^{2,3}	V _{GS} =-15V, V _{DS} =-10V, I _D =-30A	---	41	---	nC
Q _{gs}	Gate-Source Charge ^{2,3}		---	8.2	---	nC
Q _{gd}	Gate-Drain “Miller” Charge ^{2,3}		---	11	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Drain Diode Forward Voltage ²	V _{GS} =0V, I _S =-30A, T _J =25 °C	---	-0.8	-1.2	V
I _S	Continuous Source Current ^{1,5}	V _G =V _D =0V , Force Current	---	---	-100	A
I _{SM}	Pulsed Source Current ^{2,5}		---	---	-400	A

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. EAS condition: $T_J=25^{\circ}\text{C}$, $V_{DD}=-15V$, $V_G=-10V$, $R_G=25\Omega$, $L=0.5\text{mH}$, $I_{AS}=-30A$

3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Typical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

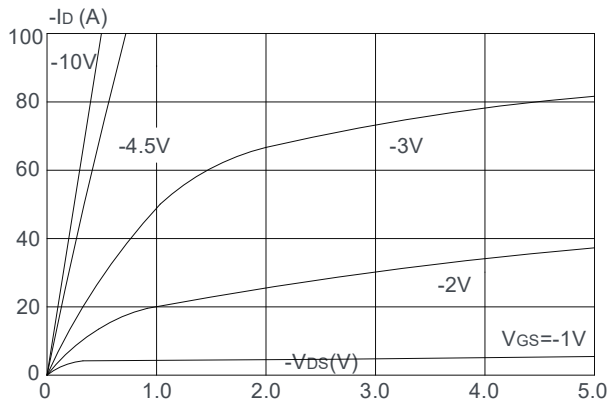


Figure 1: Output Characteristics

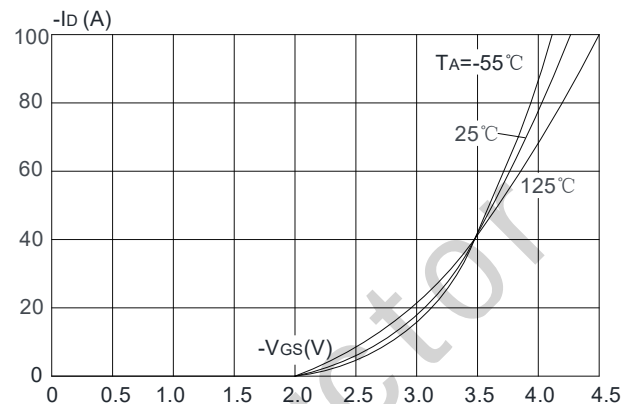


Figure 2: Typical Transfer Characteristics

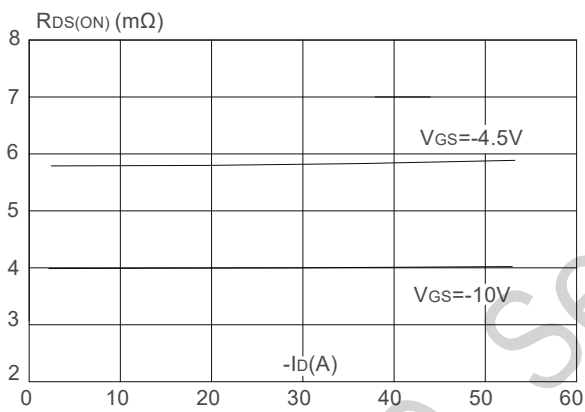


Figure 3: On-resistance vs. Drain Current

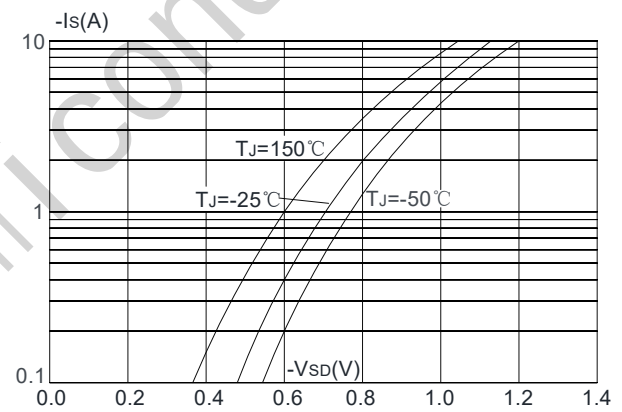


Figure 4: Body Diode Characteristics

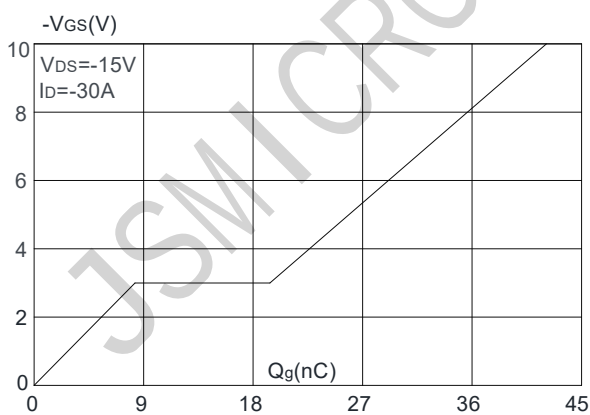


Figure 5: Gate Charge Characteristics

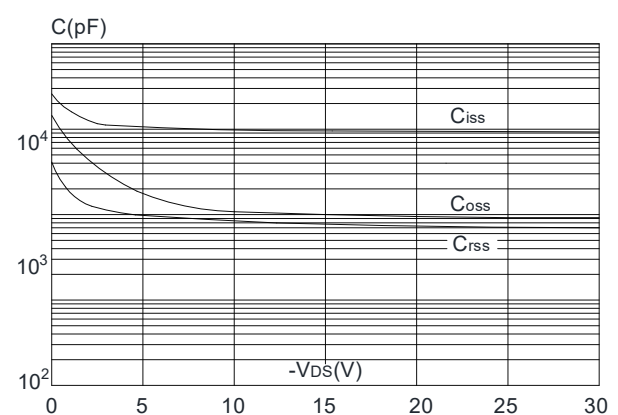


Figure 6: Capacitance Characteristics

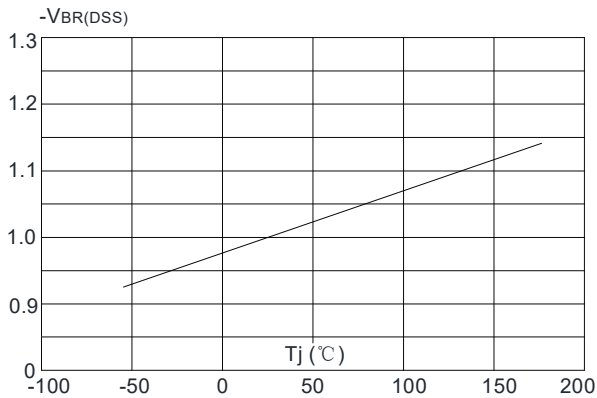


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

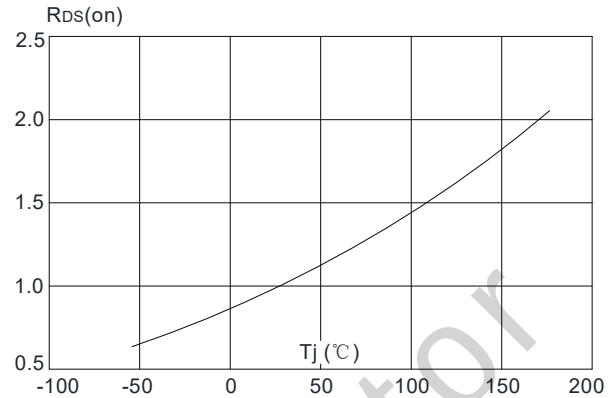


Figure 8: Normalized on Resistance vs. Junction Temperature

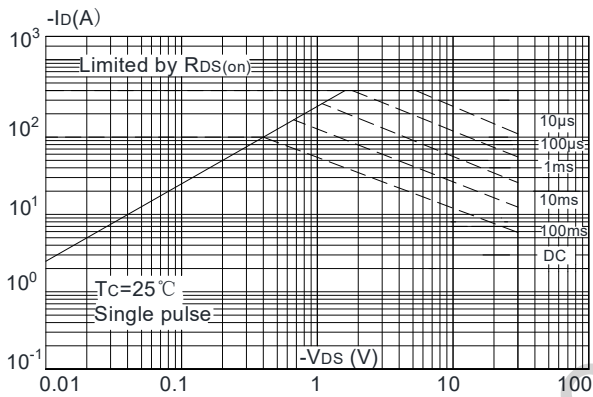


Figure 9: Maximum Safe Operating Area

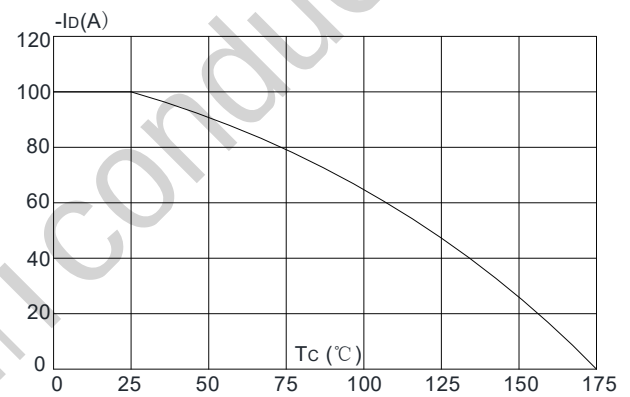


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

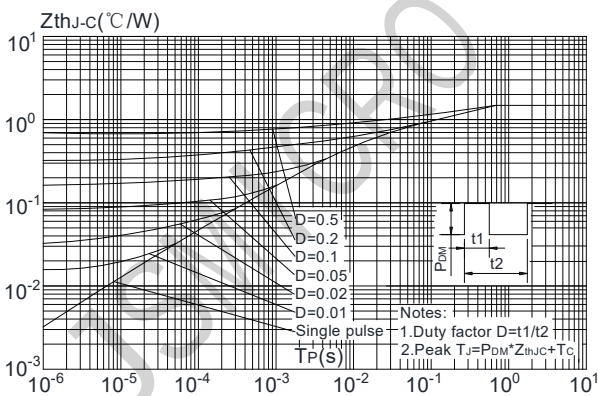


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

外形尺寸图 / Package Dimensions

