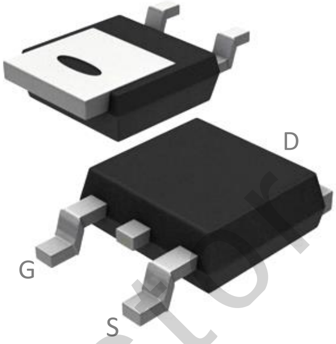
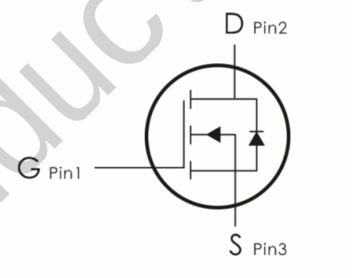
Description:

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}=30V,I_D=80A,$R_{DS(ON)}$<5.5mΩ @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	±20	V
I_D	Continuous Drain Current-T_C=25℃	80	A
	Continuous Drain Current-T_C=100℃	46	
	Pulsed Drain Current[1]	280	
E_{AS}	Single Pulse Avalanche Energy[2]	56	mJ
P_D	Power Dissipation,T_C=25℃	46	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	2.72	℃/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}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	1.5	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance[3]	V_{GS}=10V,I_D=30A	---	4.2	5.5	mΩ
		V_{GS}=4.5V,I_D=20A	---	7.5	12	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz	---	1614	---	pF
C_{oss}	Output Capacitance		---	245	---	
C_{rss}	Reverse Transfer Capacitance		---	215	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=15V, I_D=30A, V_{GS}=10V,R_{GEN}=3Ω	---	7.5	---	ns
t_r	Rise Time		---	14.5	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	35.2	---	ns
t_f	Fall Time		---	9.6	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=15V, I_D=30A	---	33.7	---	nC
Q_{gs}	Gate-Source Charge		---	8.5	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	7.5	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_S=30A	---	---	1.2	V
Is	Continuous Source Current	---	---	---	80	A
Ism	Pulsed Source Current		---	--	280	A

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

2. EAS condition: T_J=25℃,VDD=15V,VG=10V, RG=25Ω, L=0.5mH, IAS=15A

3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics: (T$_C$=25℃ unless otherwise noted)

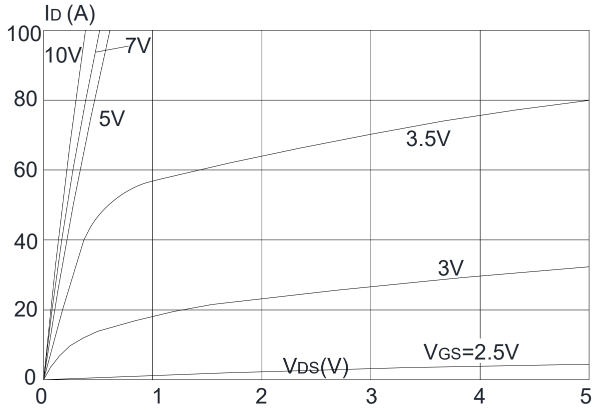


Figure1: Output Characteristics

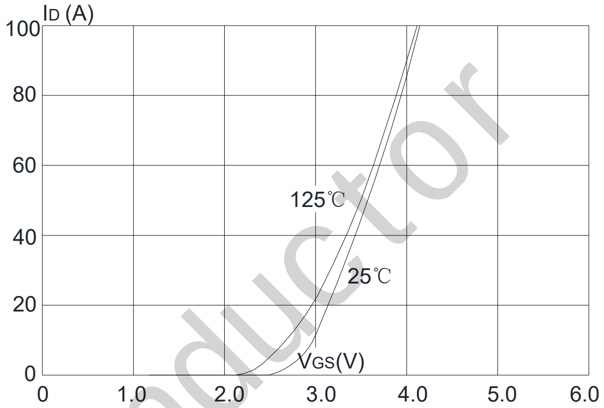


Figure 2: Typical Transfer Characteristics

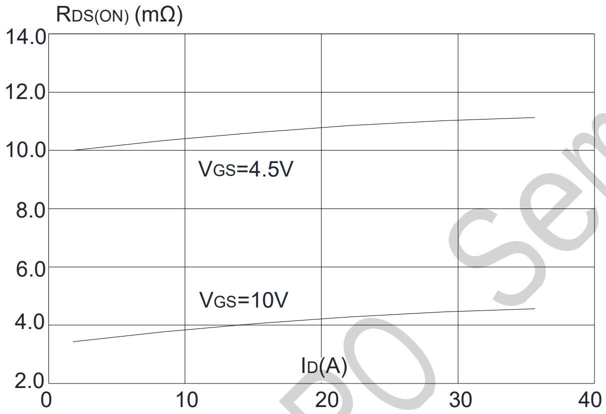


Figure 3: On-resistance vs. Drain Current

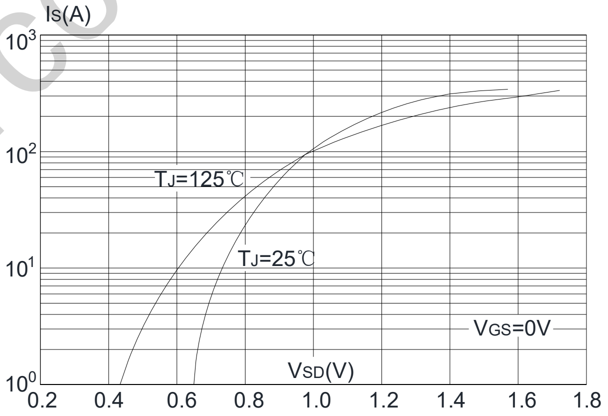


Figure 4: Body Diode Characteristics

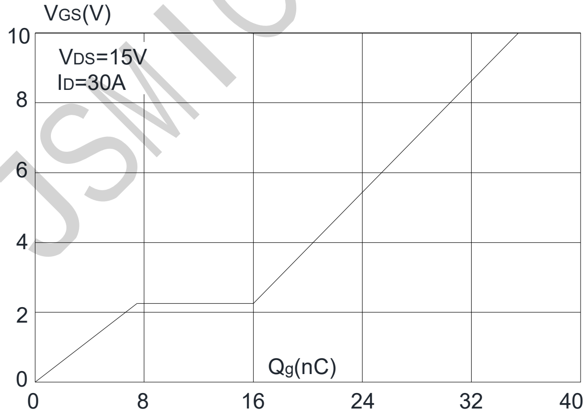


Figure 5: Gate Charge Characteristics

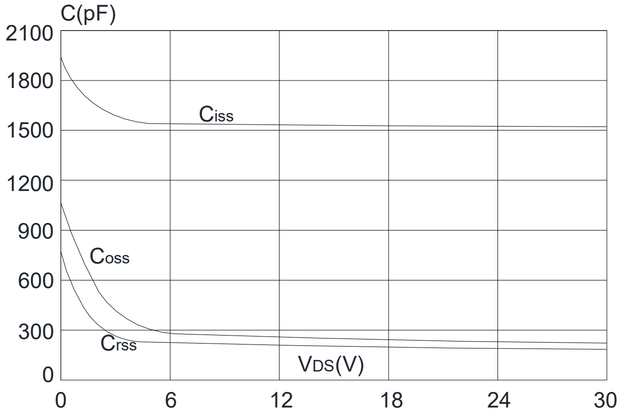


Figure 6: Capacitance Characteristics

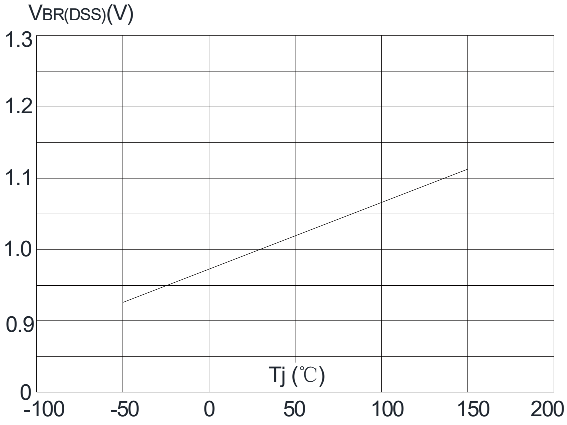


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

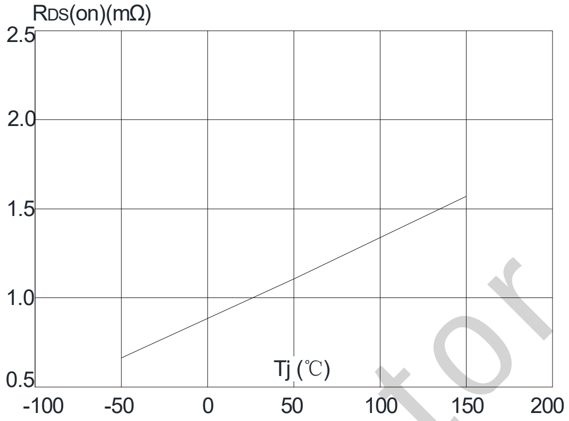


Figure 8: Normalized on Resistance vs. Junction Temperature

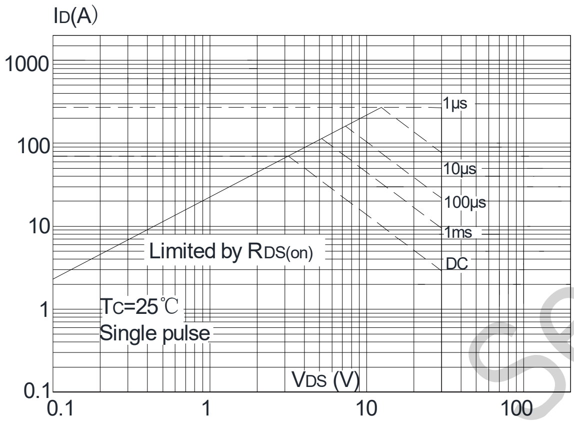


Figure 9: Maximum Safe Operating Area

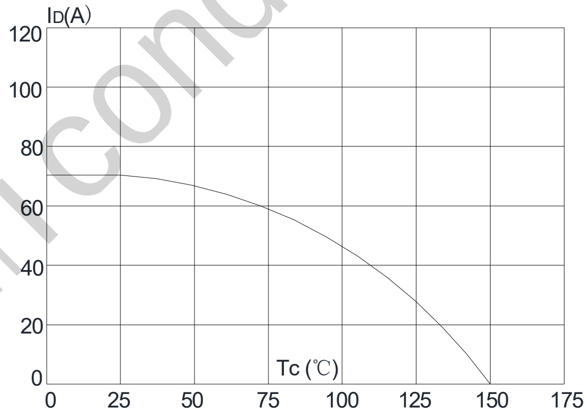


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

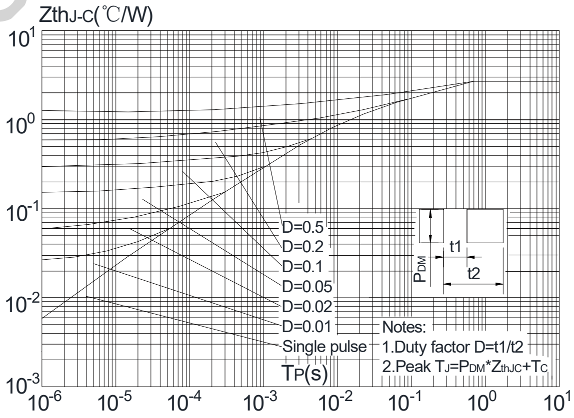


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

外形尺寸图 / Package Dimensions

TO-263

Unit: mm