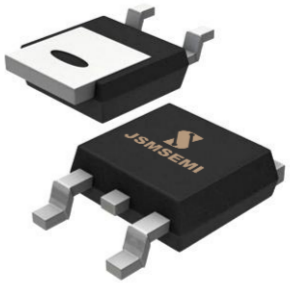
Description：

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.



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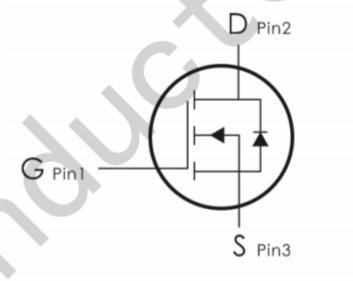
Features：

1) V_{DS}=100V,I_D=15A,$R_{DS(ON)}$<100 mΩ @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	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current-T_C=25℃	15	A
	Continuous Drain Current-T_C=70℃	12	
	Pulsed Drain Current[1]	60	
E_{AS}	Single Pulse Avalanche Energy	16	mJ
P_D	Power Dissipation,T_C=25℃	50	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	3	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	---	

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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	100	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=80V	---	---	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	3	V
$R_{DS(ON)}$	Drain-Source On Resistance[3]	V_{GS}=10V,I_D=10A	---	75	100	mΩ
		V_{GS}=4.5V,I_D=8A	---	100	115	
G_{FS}	Forward Transconductance	V_{DS}=0V, I_D=0A	---	---	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	890	---	pF
C_{oss}	Output Capacitance		---	60	---	
C_{rss}	Reverse Transfer Capacitance		---	25	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time[3]	V_{DD}=25V, I_D=8A, V_{GS}=10V,R_{GEN}=1Ω	---	14.2	---	ns
t_r	Rise Time[2,3]		---	34	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	40.4	---	ns
t_f	Fall Time[2,3]		---	6	---	ns
Q_g	Total Gate Charge[3]	V_{GS}=10V, V_{DS}=80V, I_D=10A	---	24	---	nC
Q_{gs}	Gate-Source Charge		---	5	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	8	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage[3]	V_{GS}=0V,I_S=8A	---	0.8	1.2	V

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Trr	Reverse Recovery Time	I_{SD}=8A, V_{GS}=0V di/dt=100A/μs	---	35	---	Ns
qrr	Reverse Recovery Charge		---	121	---	nc

Notes:

① Pulse width limited by maximum allowable junction temperature

② Limited by TJmax, starting TJ = 25°C, L = 0.1mH,RG = 25Ω, IAS = 18A, VGS =10V. Part not recommended for use above this value

③ Pulse width ≤ 300μs; duty cycle≤ 2%.

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

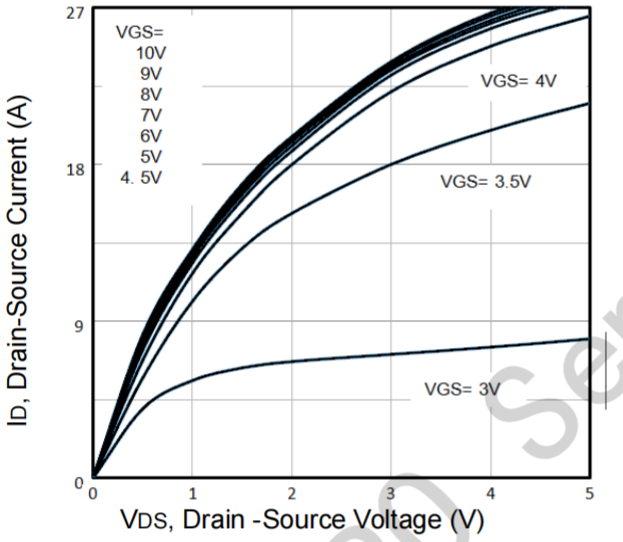

Fig1. Typical Output Characteristics

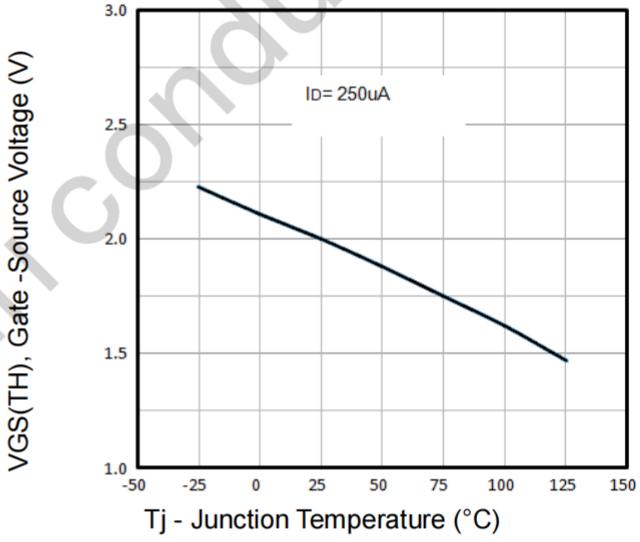

Fig2. VGS(TH) Voltage Vs. Temperature

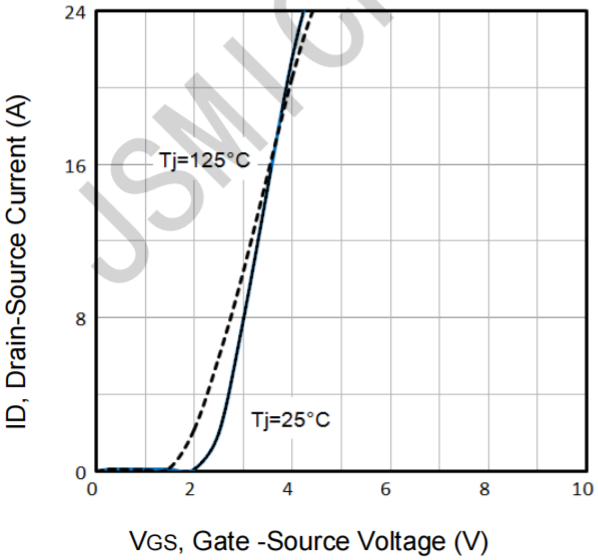

Fig3. Typical Transfer Characteristics

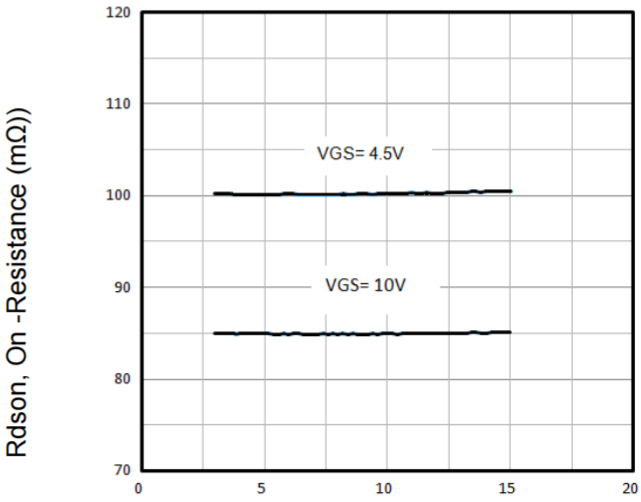

Fig4. On-Resistance vs. Drain Current and Gate Voltage

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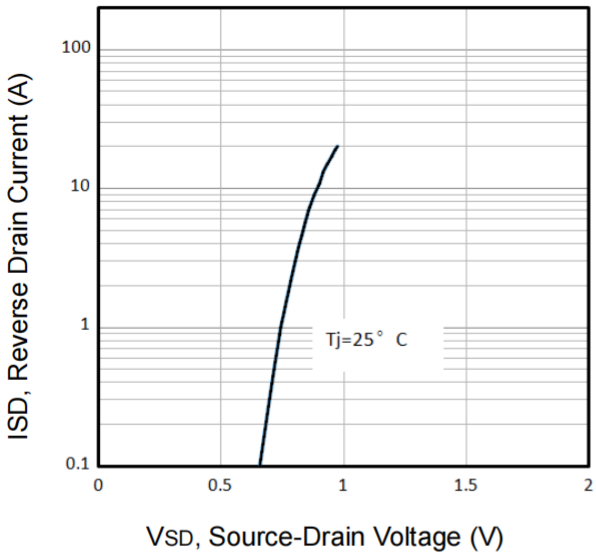

Fig5. Typical Source-Drain Diode Forward Voltage

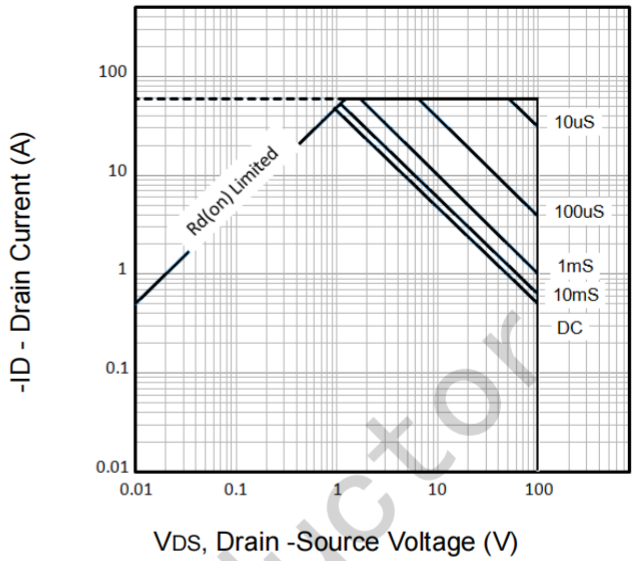

Fig6. Maximum Safe Operating Area

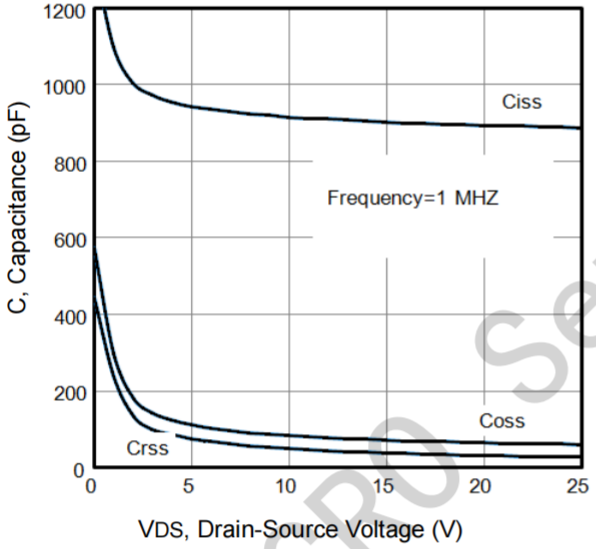

Fig7. Typical Capacitance Vs. Drain-Source Voltage

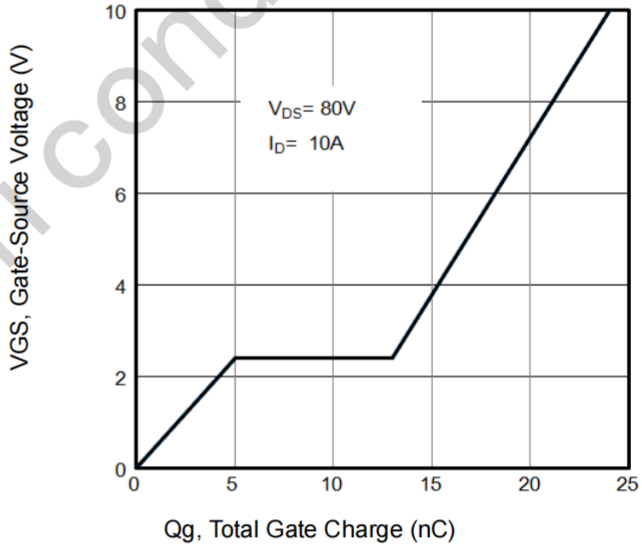

Fig8. Typical Gate Charge Vs. Gate-Source Voltage

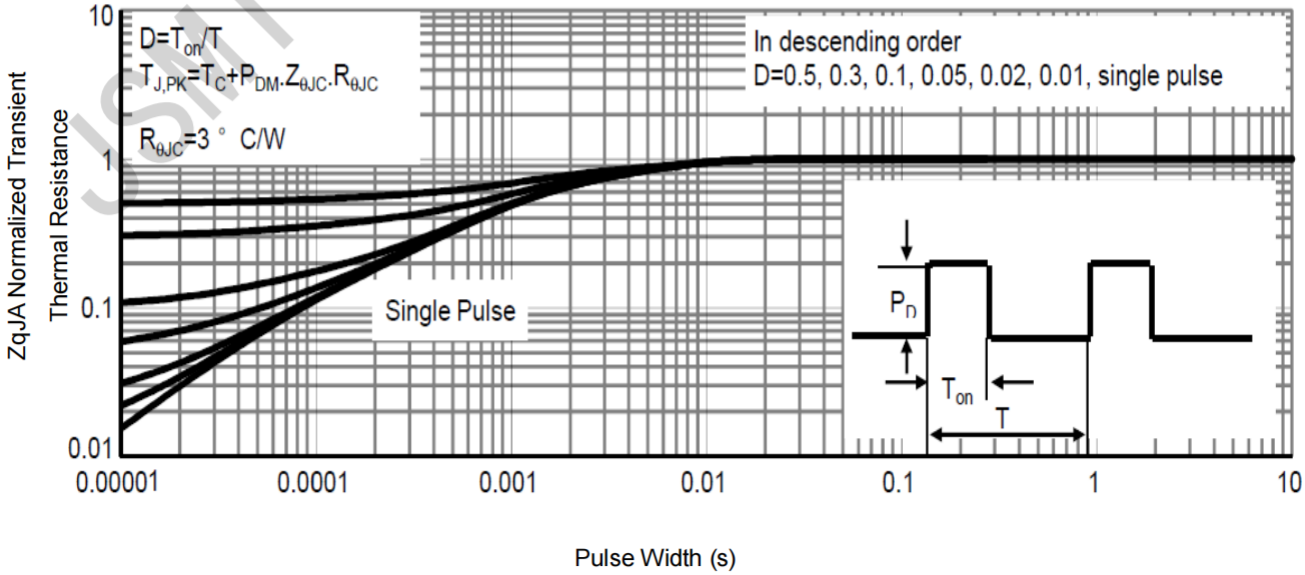

Fig9. Normalized Maximum Transient Thermal Impedance

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Package Information

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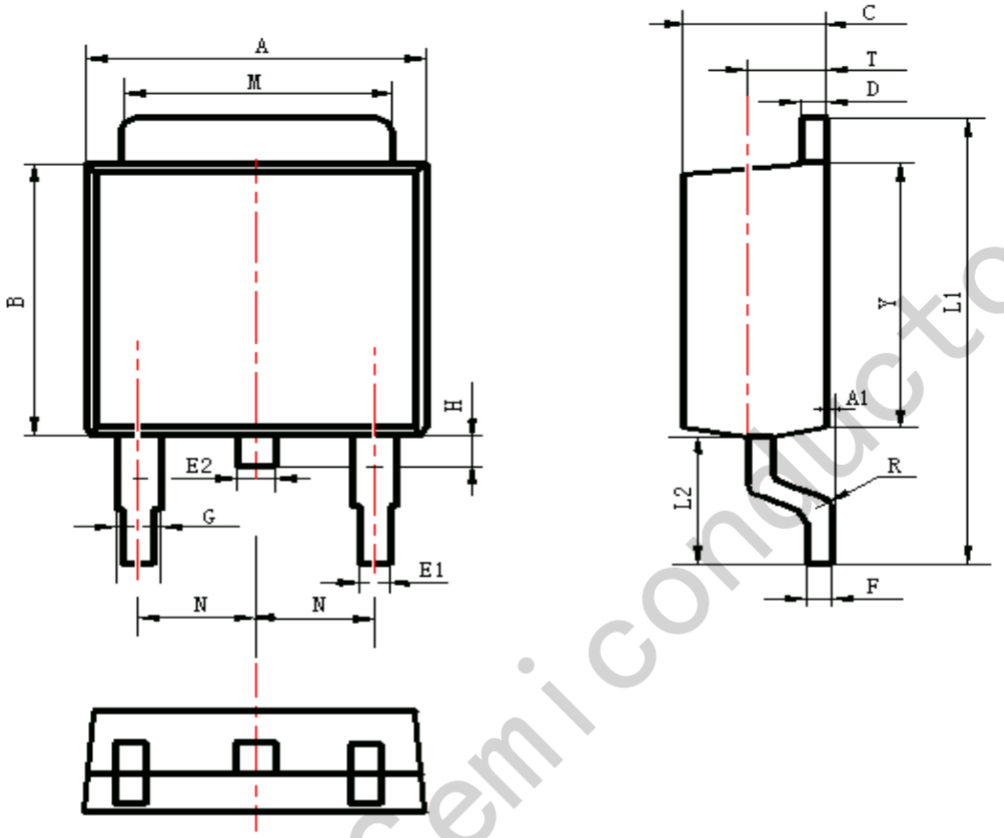

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	6.30	6.90	0.248	0.272
A1	0.00	0.16	0.000	0.006
B	5.70	6.30	0.224	0.248
C	2.10	2.50	0.083	0.098
D	0.30	0.70	0.012	0.028
E1	0.60	0.90	0.024	0.035
E2	0.70	1.00	0.028	0.039
F	0.30	0.60	0.012	0.024
G	0.70	1.20	0.028	0.047
L1	9.60	10.50	0.378	0.413
L2	2.70	3.10	0.106	0.122
H	0.40	1.00	0.016	0.039
M	5.10	5.50	0.201	0.217
N	2.09	2.49	0.082	0.098
R	0.30		0.012	
T	1.40	1.60	0.055	0.063
Y	5.10	6.30	0.201	0.248

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