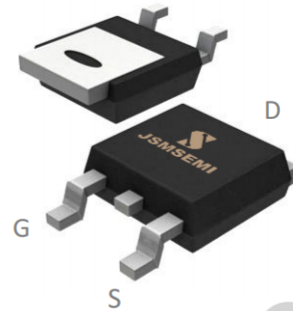


Description:

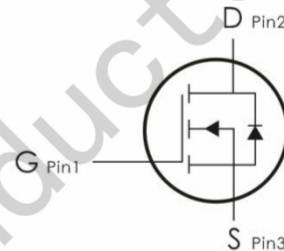
This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge. It can be used in a wide variety of applications.

■ PIN CONFIGURATION



Features:

- 1) $V_{DS}=100V, I_D=15A, R_{DS(ON)} < 100m\Omega @ V_{GS}=10V$
- 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	100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^\circ C^1$	15	A
	Continuous Drain Current- $T_C=100^\circ C^1$	11	A
I_{DM}	Pulsed Drain Current ²	24	A
P_D	Power Dissipation ³	34.7	W
E_{AS}	Single pulse avalanche energy ³	16	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case ¹	3.6	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient ¹	62	$^\circ C/W$

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	100	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =80V, V _{GS} =0V T _J =25℃	---	---	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	---	2.5	V
R _{DS(ON)}	Drain-Source On Resistanc ²	V _{GS} =10V, I _D =10A	---	75	100	m Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	---	1535	---	pF
C _{oss}	Output Capacitance		---	60	---	
C _{rss}	Reverse Transfer Capacitance		---	37	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DD} =50V, R _G =3.3Ω I _D =10A, V _{GS} =10V	---	4.2	---	ns
t _r	Rise Time		---	8.2	---	ns
t _{d(off)}	Turn-Off Delay Time		---	35.6	---	ns
t _f	Fall Time		---	9.6	---	ns
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =80V, I _D =10A	---	26.2	---	nC
Q _{gs}	Gate-Source Charge		---	4.6	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	5.1	---	nC
Drain-Source Diode Characteristics						
I _S	Continuous Source Current ^{1,5}	V _G =V _D =0V	---	---	15	A
V _{SD}	Diode Forward Voltage ²	I _S =1A T _J =25℃ V _{GS} =10V	---	---	1.2	V

Trr	Reverse Recovery Time	IF=10A , dI/dt=100A/μs, TJ=25℃	---	37	---	ns
Qrr	Reverse Recovery Charge		---	27.3	---	nC

Notes:

- 1.The data tested by surface mounted on a 1 inch FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The EAS data shows Max. rating . The test condition is $V_{DD}=25V, V_{GS}=10V, L=0.5mH, I_{AS}=8 A$
- 4.The power dissipation is limited by 150℃ junction temperature
- 5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics:

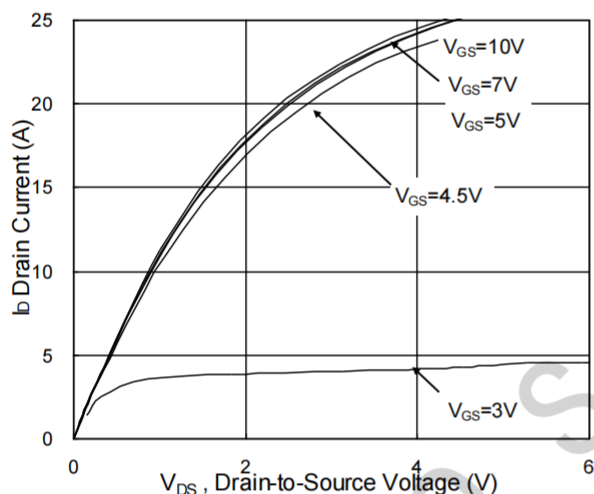


Fig.1 Typical Output Characteristics

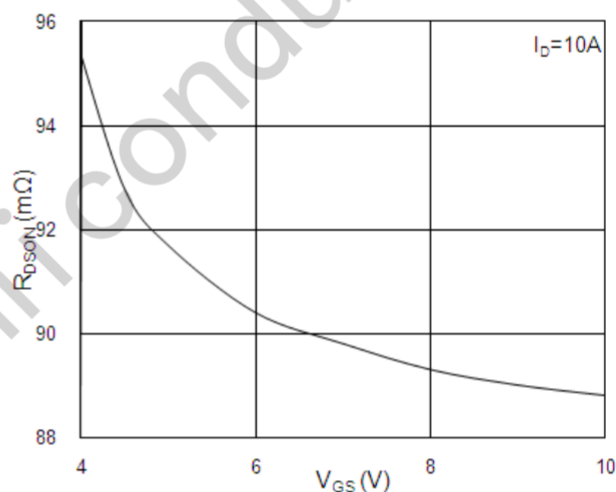


Fig.2 On-Resistance vs. Gate-Source

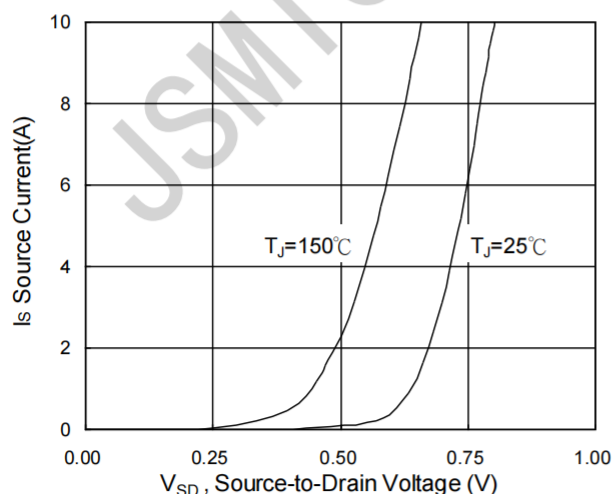


Fig.3 Forward Characteristics Of Reverse

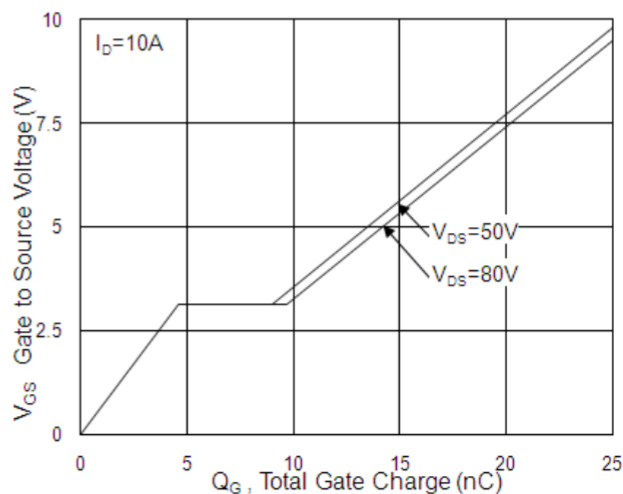
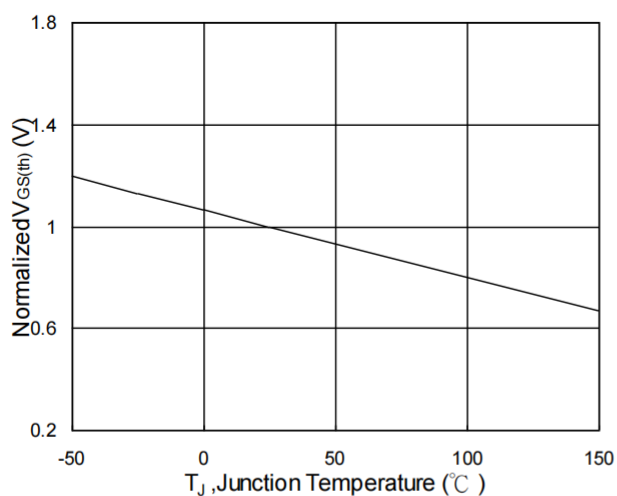
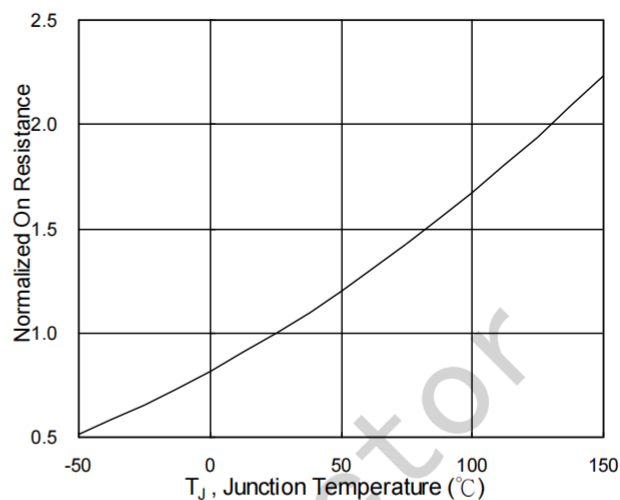
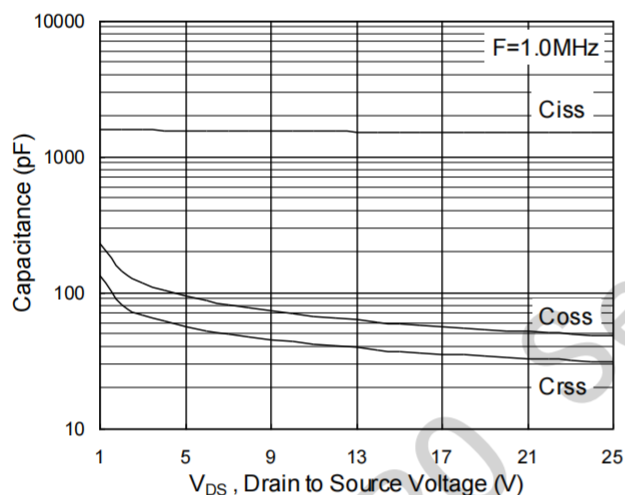
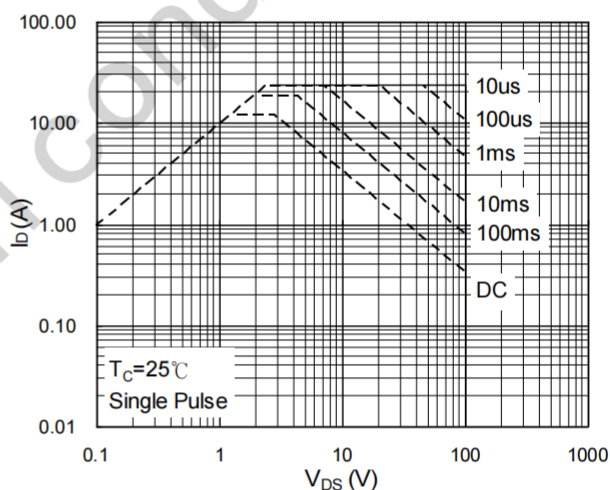
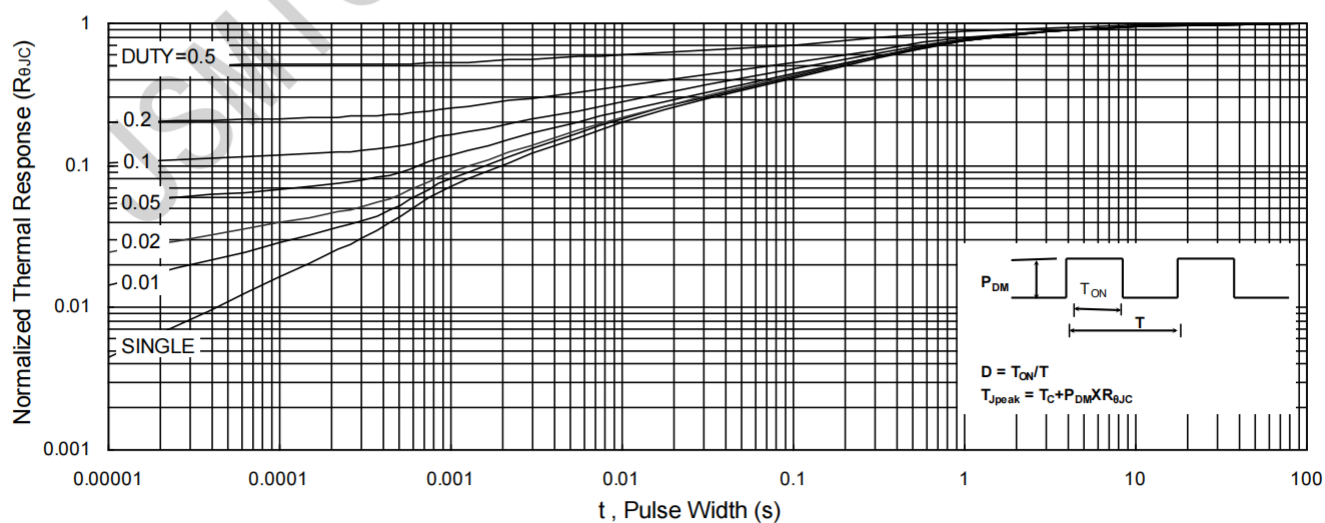
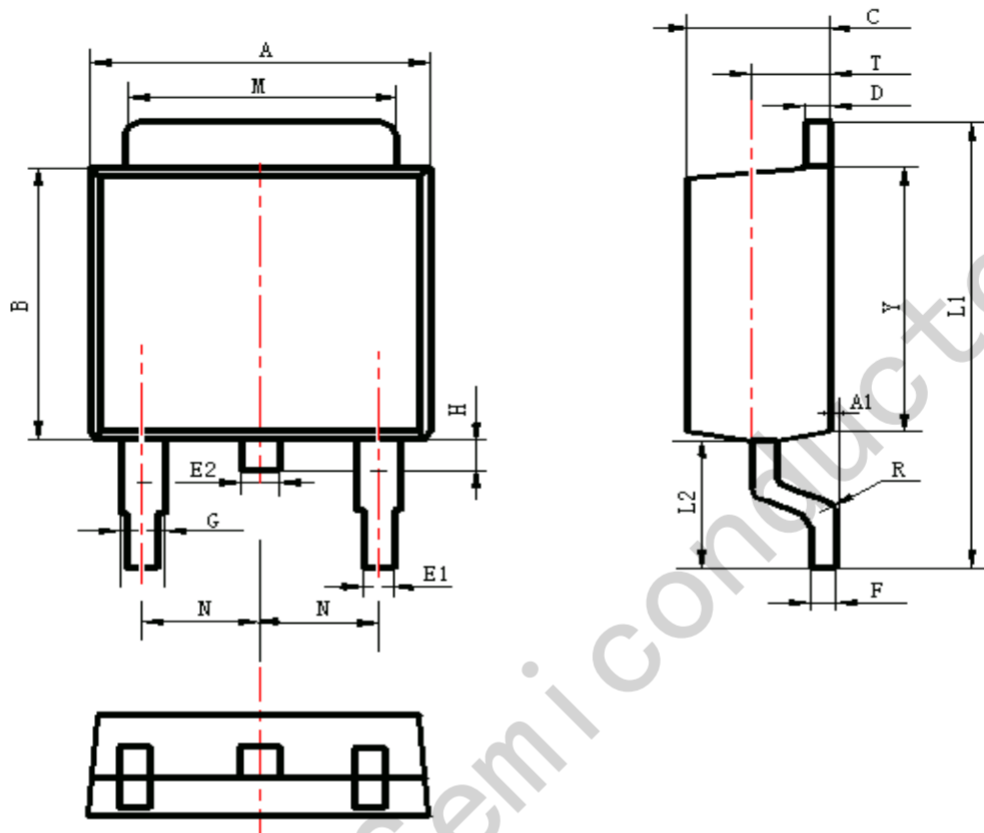


Fig.4 Gate-Charge Characteristics


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

Fig.6 Normalized $R_{DS(on)}$ vs. T_J

Fig.7 Capacitance

Fig.8 Safe Operating Area

Fig.9 Normalized Maximum Transient Thermal Impedance

Package Information

TO-252



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