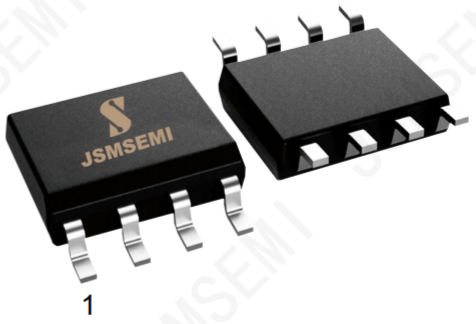
Product Summary

- V_{DS} -30V
- I_D -13A
- $R_{DS(ON)}$(at V_{GS}=10V) ＜13mΩ
- 100% EAS Tested
- 100% ▽V_{DS} Tested



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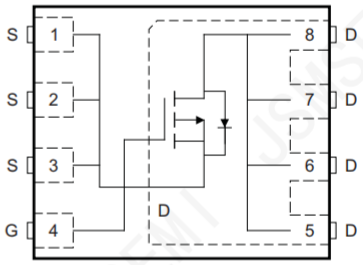
SOP-8

General Description

- Trench Power MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free



Applications

- Power switching application
- Uninterruptible power supply
- DC-DC convertor
- Motor drivers

Absolute Maximum Ratings：(T_a=25℃ unless otherwise noted)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current (T_A=25℃)	V_{GS}=10V	-13	A
	Continuous Drain Current (T_A=70℃)		-9.5	A
I_{DM}	Pulsed Drain Current		-40	A
I_S	Continuous Source Current (Diode Conduction)		-2.0	A
P_D	Power Dissipation	T_A=25℃	2.0	W
		T_A=70℃	1.5	
T_J	Operation Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-55~+150	℃
$R_{\theta JA}$	Thermal Resistance Junction to Ambient		85	℃/W

Note: Absolute maximum ratings are those values beyond which the device could bepermanently damaged. Absolute maximum ratings are stress rating only and functional device operation is not implied

Ordering Information

Order number	Package	Marking	Operation Temperature Range	MSL Grade	Ship, Quantity	Green
JSM4407	SOP-8	4407	-55 to150°C	1	T&R,3000	Rohs

Electrical Characteristics：(T_A=25℃ unless otherwise noted)

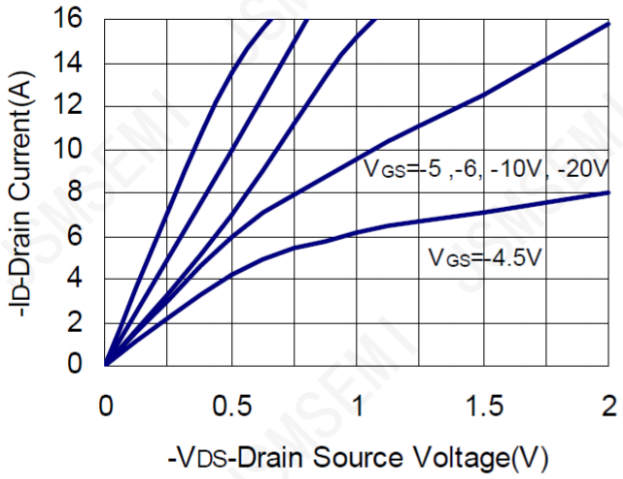
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250uA	-30			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-1.0	-1.4	-2.0	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±25V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-30V, V_{GS}=0			-1	uA
		V_{DS}=-30V, V_{GS}=0 T_J=55℃			-5	
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=-10V, I_D=-10A		9	13	mΩ
		V_{GS}=-4.5V, I_D=-7.0A		14.5	17	
Source-Drain Diode						
V_{SD}	Diode Forward Voltage	I_S=-2.3A, V_{GS}=0V		-0.75	-1.0	V
Dynamic Parameters						
Q_g	Total Gate Charge	V_{DS}=-15V		30	42	nC
Q_{gs}	Gate-Source Charge	V_{GS}=-4.5V		10	14	
Q_{gd}	Gate-Drain Charge	I_D=-10A		10.4	14.6	
C_{iss}	Input Capacitance	V_{DS}=-15V		2050	2730	pF
C_{oss}	Output Capacitance	V_{GS}=0V		506	710	
C_{rss}	Reverse Transfer Capacitance	f=1MHz		420	590	
$T_{d(on)}$	Turn-On Time	V_{DS}=-15V		9.3	19	nS
T_r		I_D=-10A		10.2	18	
$T_{d(off)}$	Turn-Off Time	V_{GEN}=-10V		117	232	
T_f		R_G=3.3Ω		24	46	

Note: 1. Pulse test: pulse width<=300uS, duty cycle<=2%

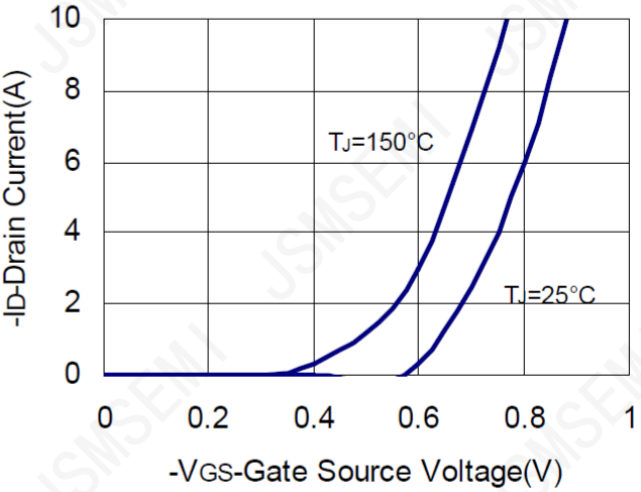
2.Static parameters are based on package level with recommended wire bonding

Typical CharacteristicsS(25℃ Unless Note)

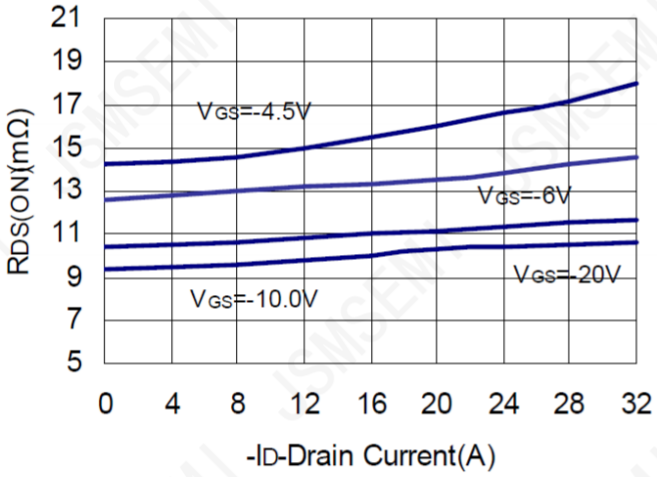
Output Characteristics



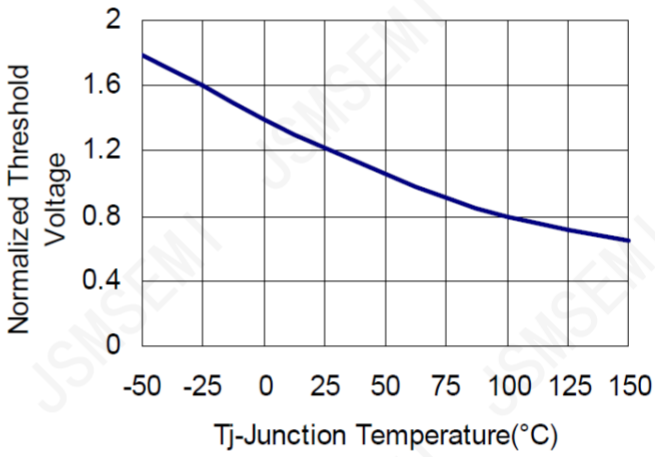
Transfer Characteristics



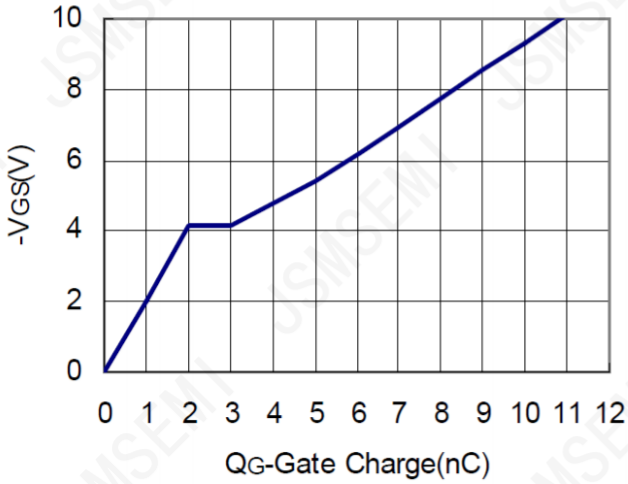
Drain Source On Resistance



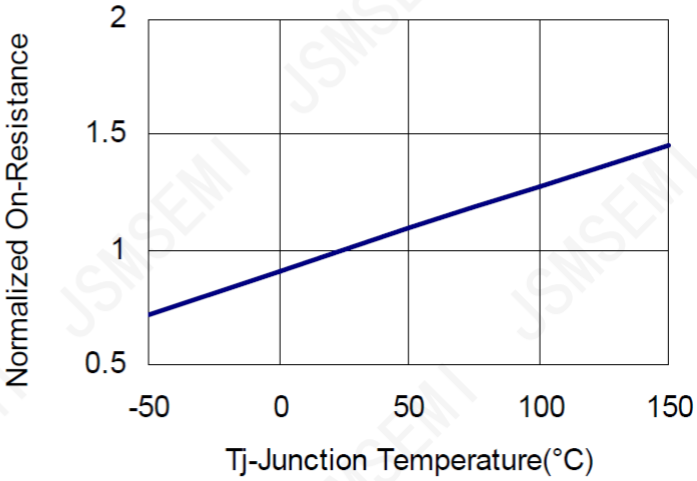
Gate Threshold Voltage



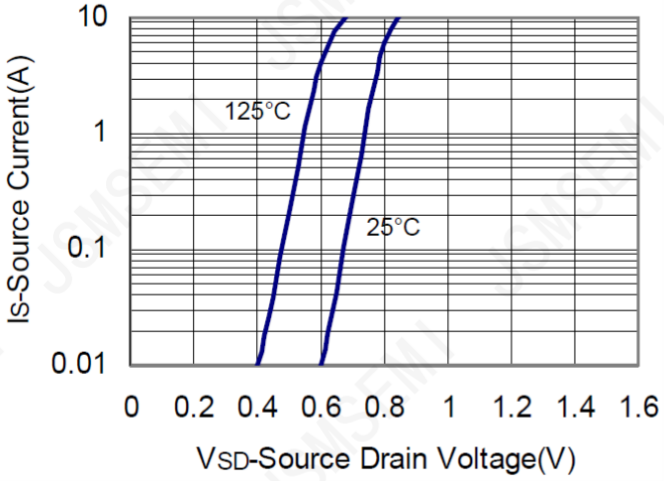
Gate Charge



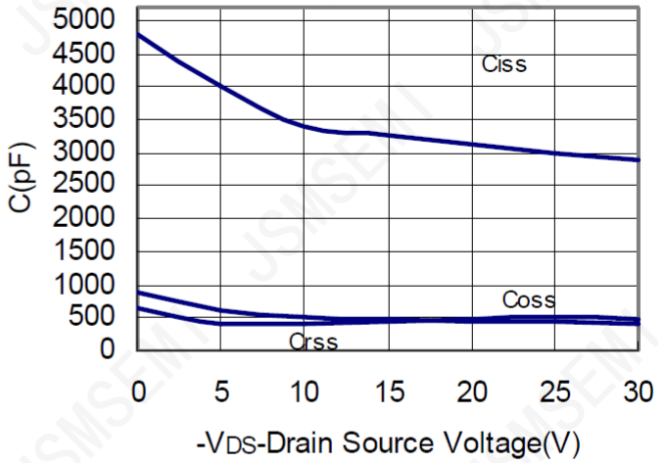
Drain Source Resistance



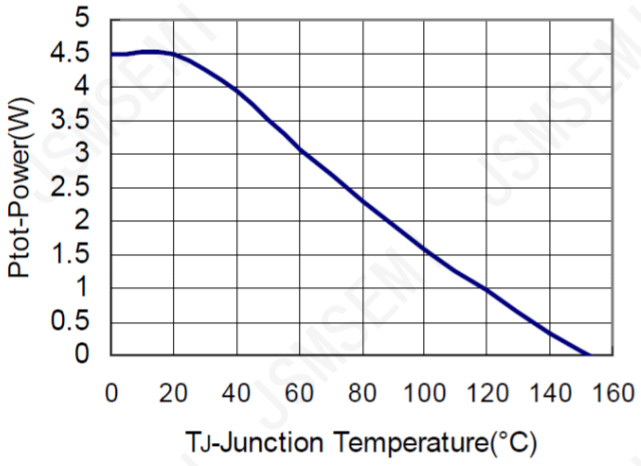
Source Drain Diode Forward



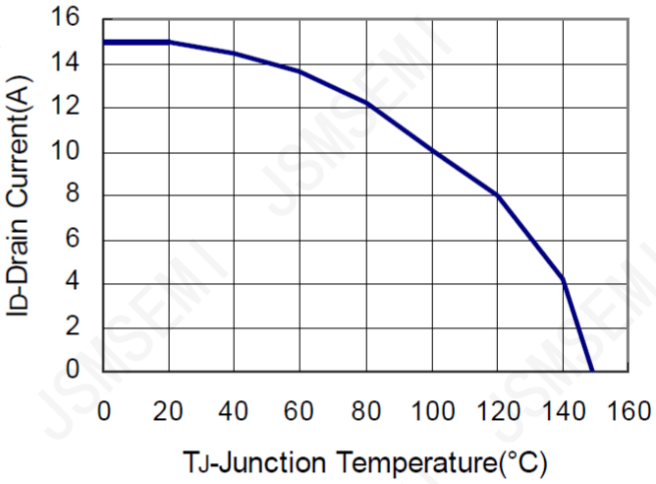
Capacitance



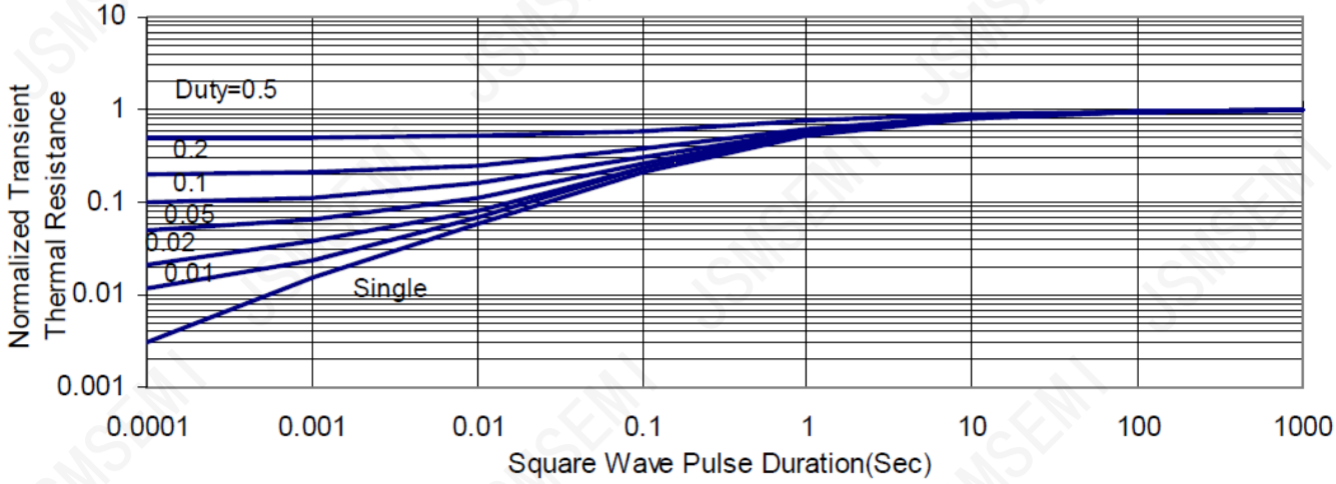
Power Dissipation



Drain Current



Thermal Transient Impedance



Package Information

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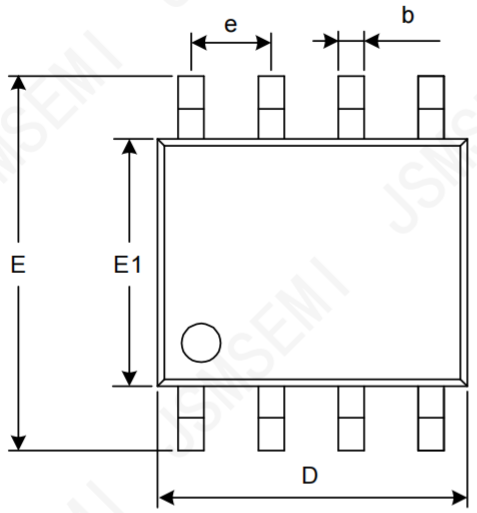
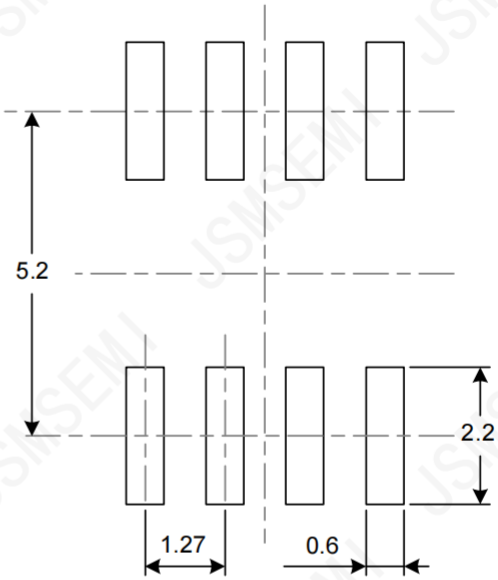
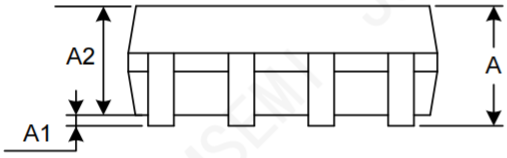
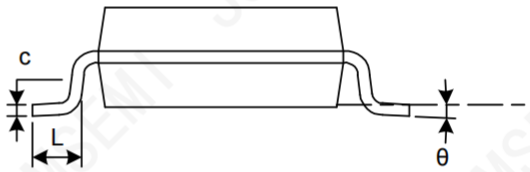




RECOMMENDED LAND PATTERN (Unit: mm)





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

Revision History

Rev.	Change	Date
V1.0	Initial version	6/27/2023
V2.0	Second edition	6/25/2024

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