

Product Summary

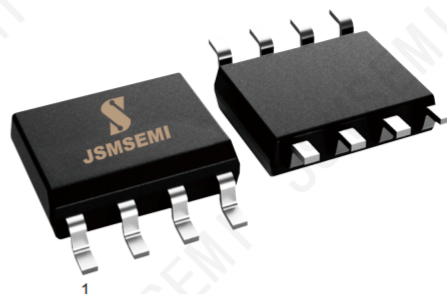
- V_{DS} 100V
- I_D 10A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) $<25m\Omega$
- 100% EAS Tested
- 100% ∇V_{DS} Tested

General Description

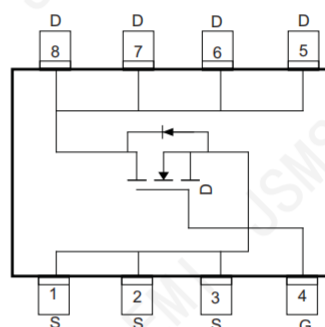
- Split gate trench MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

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



Top View



■ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter		Typical	Unit
V _{DSS}	Drain-Source Voltage		100	V
V _{GSS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current (T _A =25℃)	V _{GS} =10V	10	A
	Continuous Drain Current (T _A =70℃)		7	A
I _{DM}	Pulsed Drain Current		35	A
I _S	Continuous Source Current (Diode Conduction)		4.0	A
P _D	Power Dissipation	T _A =25℃	3.0	W
		T _A =70℃	2.1	
T _J	Operation Junction Temperature		150	℃
T _{STG}	Storage Temperature Range		-55~+150	℃
R _{θJA}	Thermal Resistance Junction to Ambient		85	℃/W

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress rating only and functional device operation is not implied

Ordering Information

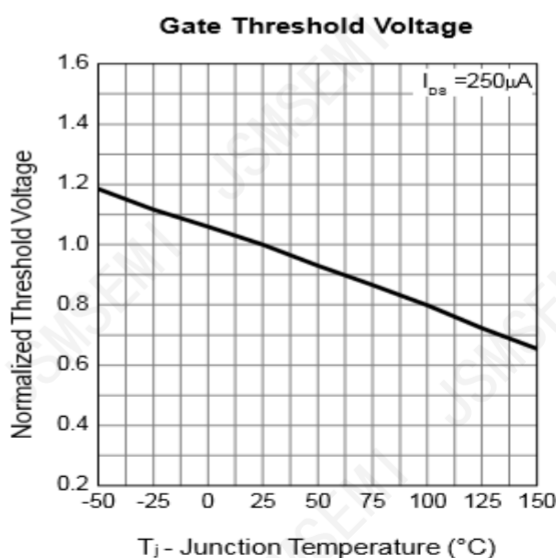
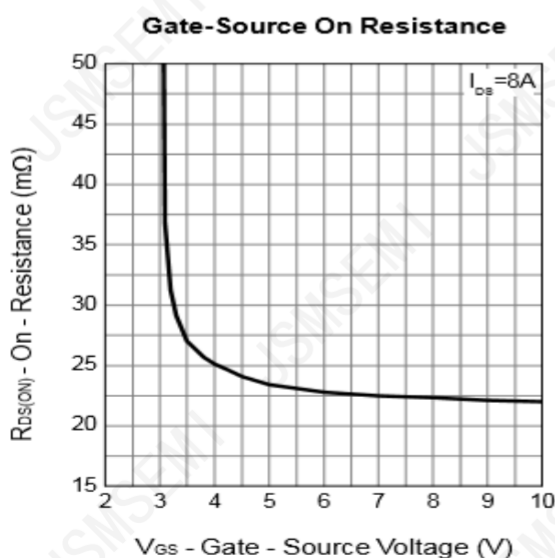
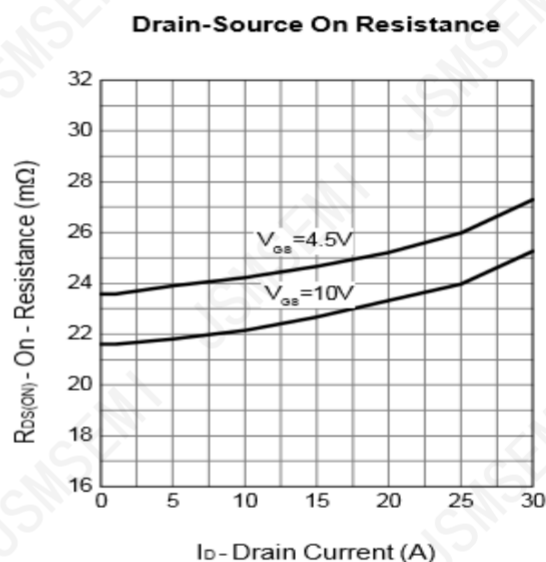
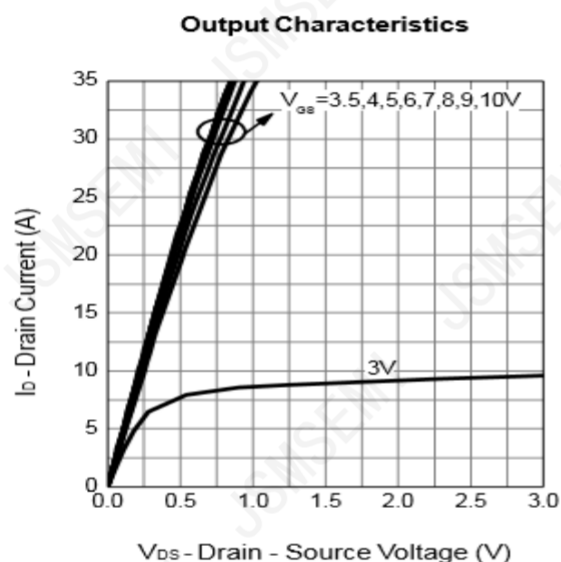
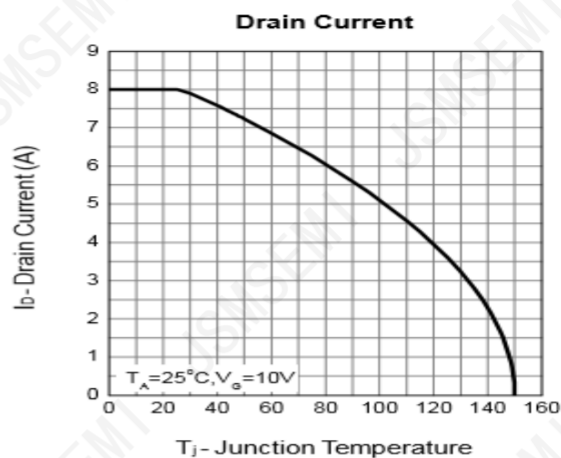
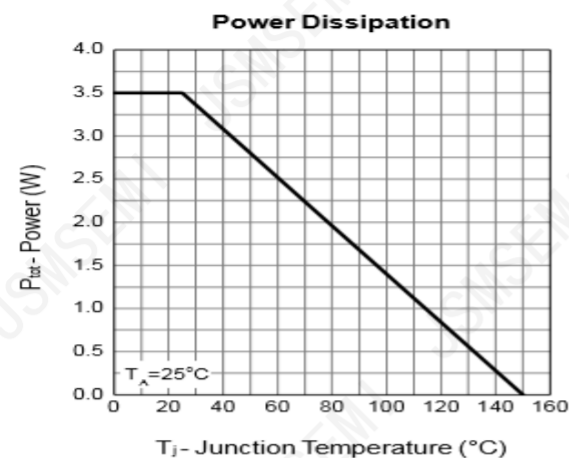
Order number	Package	Marking	Operation Temperature Range	MSL Grade	Ship,Quantity	Green
SI4058DY-T1-GE3-JSM	SOP-8	4058	-55 to 150°C	1	T&R,3000	Rohs

■ Electrical Characteristics ($T_J=25^{\circ}\text{C}$ 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	100			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1.0	2.0	3.0	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} =0			1	uA
		V _{DS} =100V, V _{GS} =0 T _J =55℃			5	
R _{DS(ON)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =10A		20	25	mΩ
		V _{GS} =4.5V, I _D =8A		25	30	
Source-Drain Diode						
V _{SD}	Diode Forward Voltage	I _S =1.0A, V _{GS} =0V		0.76	1.0	V
Dynamic Parameters						
Q _g	Total Gate Charge	V _{DS} =30V V _{GS} =10V I _D =8A		50	65	nC
Q _{gs}	Gate-Source Charge			8		
Q _{gd}	Gate-Drain Charge			10		
C _{iss}	Input Capacitance	V _{DS} =30V V _{GS} =0V f=1MHz		980	1320	pF
C _{oss}	Output Capacitance			150		
C _{rss}	Reverse Transfer Capacitance			85		
T _{d(on)}	Turn-On Time	V _{DS} =30V I _D =1A V _{GEN} =10V R _G =6Ω		18	33	nS
T _r				9	17	
T _{d(off)}	Turn-Off Time			56	101	
T _f				14	26	

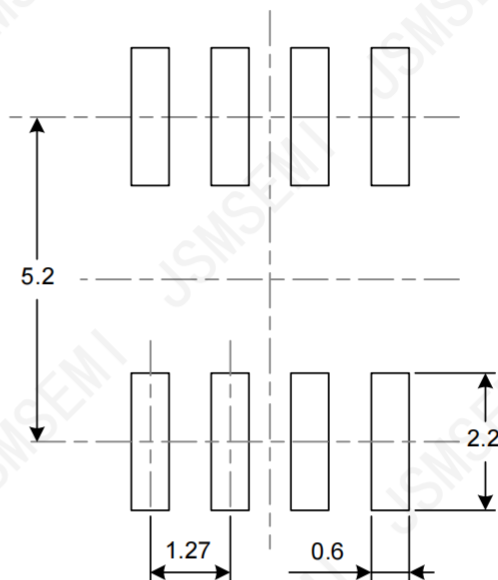
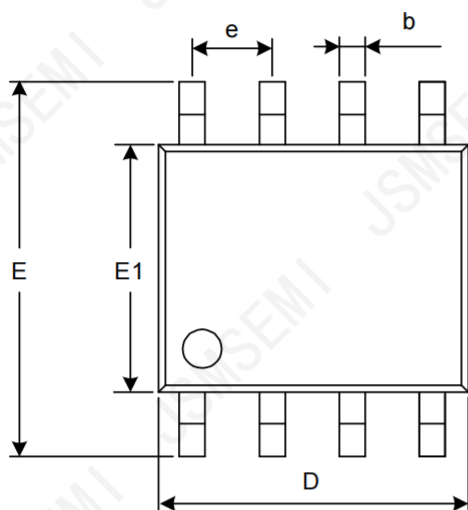
Note: 1. Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$

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

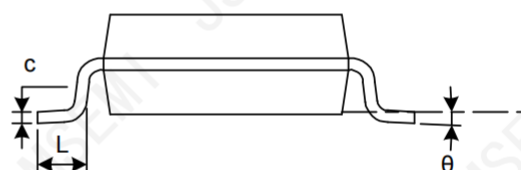
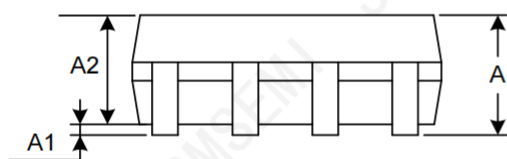
Typical Electrical Characteristics Diagrams


Package Information

SOIC-8



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	6/27/2021

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