

Product Summary

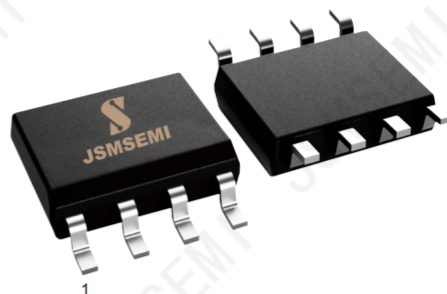
- V_{DS} 100V
- I_D 8A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) $<35m\Omega$
- 100% EAS Tested
- 100% ∇V_{DS} Tested

General Description

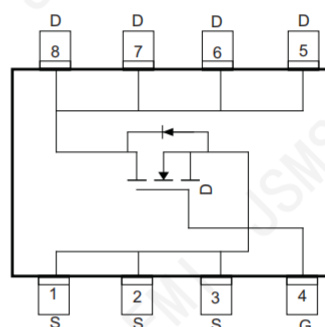
- Split gate trench MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

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	8.0	A
	Continuous Drain Current (T _A =70℃)		5.6	A
I _{DM}	Pulsed Drain Current		32	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

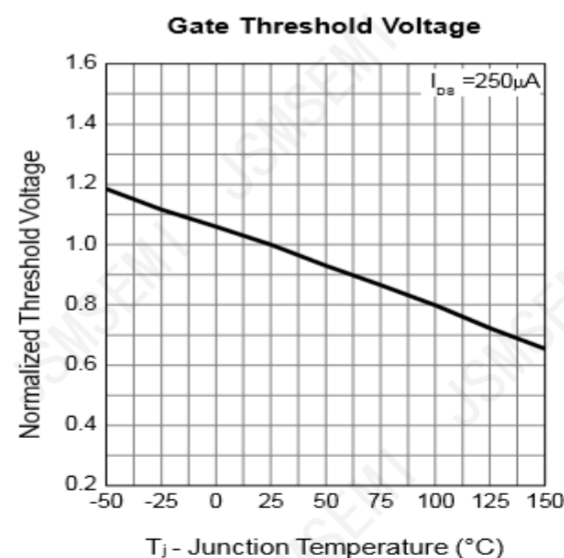
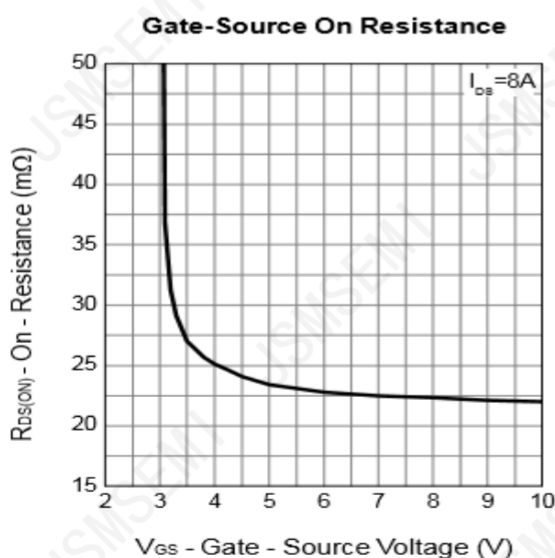
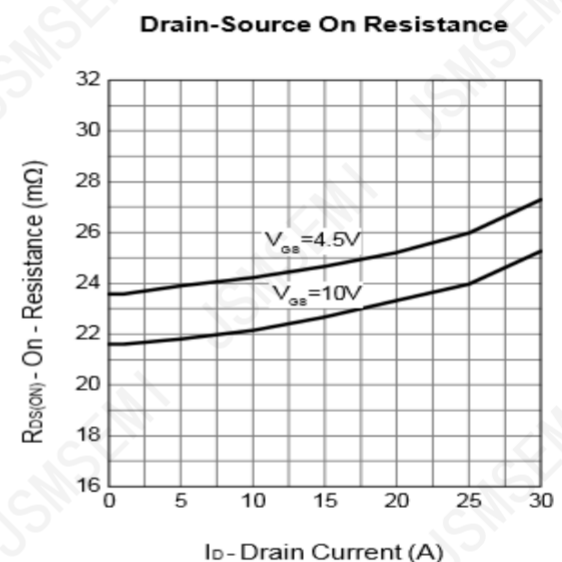
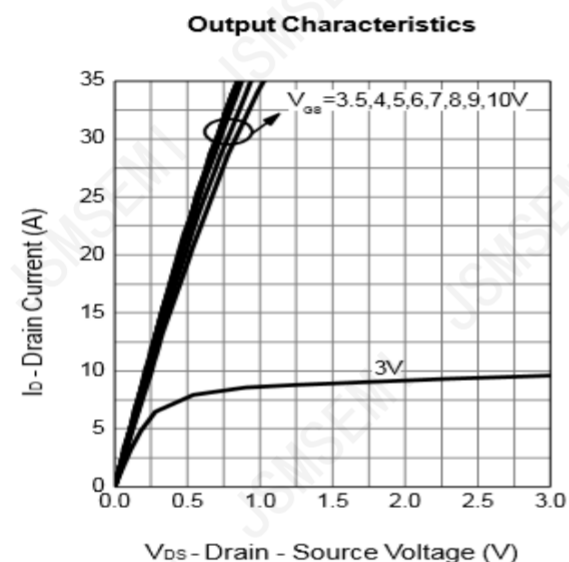
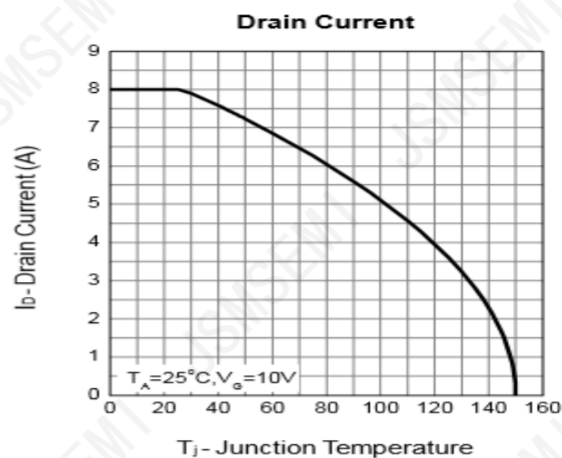
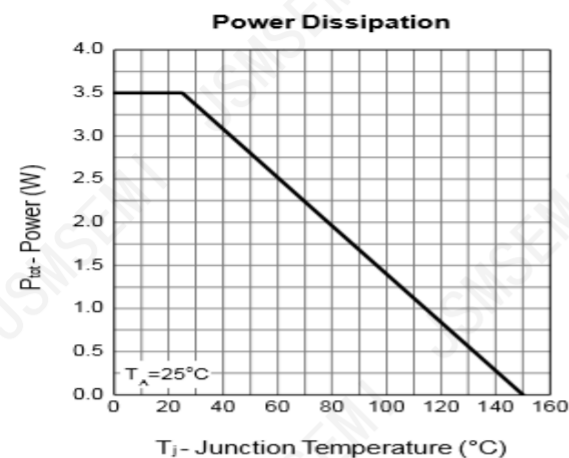
Order number	Package	Marking	Operation Temperature Range	MSL Grade	Ship,Quantity	Green
IRF7490TRPBF-JSM	SOP-8	F7490	-55 to 150°C	1	T&R,3000	Rohs

■ 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	$V_{GS}=0V, I_D=250\mu A$	100			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	2.0	3.0	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0$			1	μA
		$V_{DS}=100V, V_{GS}=0$ $T_J=55^{\circ}C$			5	
$R_{DS(ON)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=5A$		30	35	m Ω
		$V_{GS}=4.5V, I_D=4A$		38	42	
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	$V_{DS}=30V$ $I_D=1A$ $V_{GEN}=10V$ $R_G=6\Omega$		18	33	nS
T_r				9	17	
$T_{d(off)}$	Turn-Off Time			56	101	
T_f				14	26	

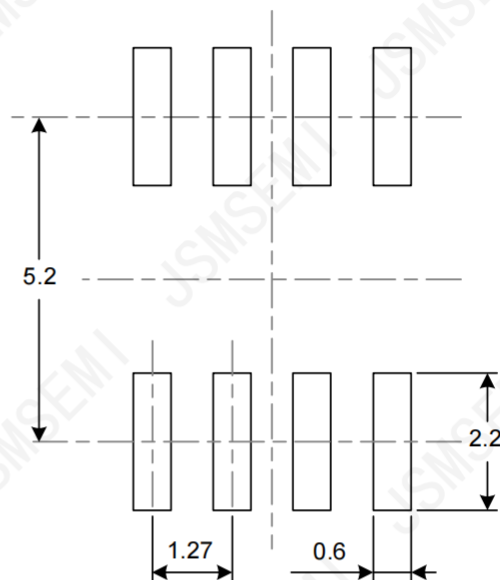
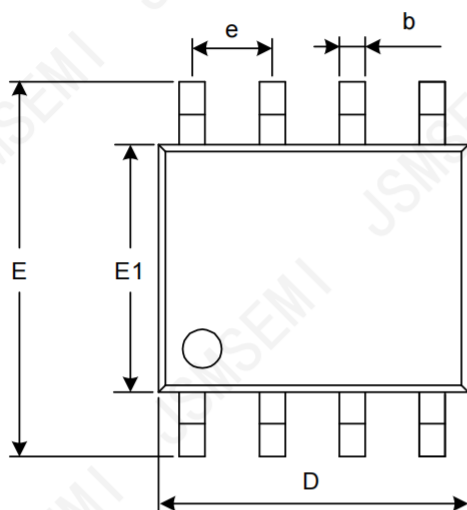
Note: 1. Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$

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

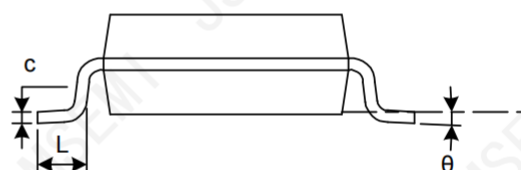
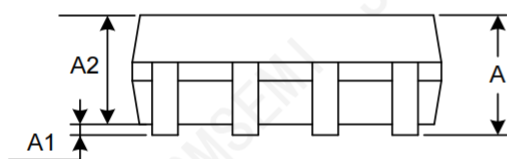
Typical Electrical Characteristics Diagrams


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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