

**RoHS** 

COMPLIANT HALOGEN

FREE Available

# IRF7324TRPBF-VB Datasheet Dual P-Channel 20V (D-S) MOSFET

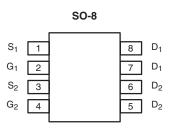
PRODUCT SUMMARY				
V <sub>DS</sub> (V)	R <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)		
	0.018 at V <sub>GS</sub> = - 4.5 V	- 8.9		
- 20	0.022 at V <sub>GS</sub> = - 2.5 V	- 8.1		
	0.030 at V <sub>GS</sub> = - 1.8 V	- 3.6		

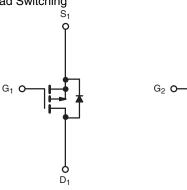
#### FEATURES

- Halogen-free According to IEC 61249-2-21
   Definition
- Trench Power MOSFET
- Advanced High Cell Density Process
- Compliant to RoHS Directive 2002/95/EC

#### APPLICATIONS

Load Switching







S<sub>2</sub>

P-Channel MOSFET

P-Channel MOSFET

<b>ABSOLUTE MAXIMUM RATINGS</b>	T <sub>A</sub> = 25 °C, unles	ss otherwise n	noted		
Parameter		Symbol	10 s	Steady State	Unit
Drain-Source Voltage		V <sub>DS</sub>	- 20		V
Gate-Source Voltage		V <sub>GS</sub>	± 12		V
Continuous Drain Current (T <sub>J</sub> = 150 °C) <sup>a</sup>	T <sub>A</sub> = 25 °C	– I <sub>D</sub>	- 8.9	- 6.7	
	T <sub>A</sub> = 70 °C		- 7.1	- 5.4	
Pulsed Drain Current		I <sub>DM</sub>	- 30		A
Continuous Source Current (Diode Conduction) <sup>a</sup>		۱ <sub>S</sub>	- 1.7	- 0.9	
	T <sub>A</sub> = 25 °C	P	2.0	1.1	W
Maximum Power Dissipation <sup>a</sup>	T <sub>A</sub> = 70 °C	P <sub>D</sub>	1.3	0.7	~~~
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	- 55 t	o 150	°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
	t ≤ 10 s	- R <sub>thJA</sub>	46	62.5	
Maximum Junction-to-Ambient <sup>a</sup>	Steady State		80	110	°C/W
Maximum Junction-to-Foot (Drain)	Steady State	R <sub>thJF</sub>	24	32	

Notes:

a. Surface Mounted on 1" x 1" FR4 board.

Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit	
Static							
Gate Threshold Voltage	V <sub>GS(th)</sub>	$V_{DS} = V_{GS}, I_{D} = -350 \ \mu A$	- 0.4		- 1.0	V	
Gate-Body Leakage	I <sub>GSS</sub>	$V_{DS} = 0 V$ , $V_{GS} = \pm 8 V$			± 100	nA	
Zero Gate Voltage Drain Current	1	$V_{DS} = -20 V, V_{GS} = 0 V$			- 1	μΑ	
Zero Gale volage Drain Current	IDSS	$V_{DS}$ = - 20 V, $V_{GS}$ = 0 V, $T_{J}$ = 55 °C			- 5		
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	$V_{DS} = -5 V, V_{GS} = -4.5 V$	- 30			Α	
		V <sub>GS</sub> = - 4.5 V, I <sub>D</sub> = - 8.9 A		0.018			
Drain-Source On-State Resistance <sup>a</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = - 2.5 V, I <sub>D</sub> = - 8.1 A		0.022		Ω	
		V <sub>GS</sub> = - 1.8 V, I <sub>D</sub> = - 3.6 A		0.030			
Forward Transconductance <sup>a</sup>	9 <sub>fs</sub>	V <sub>DS</sub> = - 10 V, I <sub>D</sub> = - 8.9 A		26		S	
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	$I_{S} = -1.7 \text{ A}, V_{GS} = 0 \text{ V}$		- 0.7	- 1.2	V	
Dynamic <sup>b</sup>							
Total Gate Charge	Qg			34.5	52		
Gate-Source Charge	Q <sub>gs</sub>	$V_{DS}$ = - 10 V, $V_{GS}$ = - 4.5 V, $I_D$ = - 8.9 A		5.1		nC	
Gate-Drain Charge	Q <sub>gd</sub>			9.6			
Gate Resistance	R <sub>g</sub>			9		Ω	
Turn-On Delay Time	t <sub>d(on)</sub>			25	40		
Rise Time	t <sub>r</sub>	$V_{DD}$ = - 10 V, R <sub>L</sub> = 6 $\Omega$		46	70		
Turn-Off Delay Time	t <sub>d(off)</sub>	$\text{I}_\text{D}\cong$ - 1 A, $\text{V}_\text{GEN}$ = - 4.5 V, $\text{R}_\text{g}$ = 6 $\Omega$		230	345	ns	
Fall Time	t <sub>f</sub>			155	235		
Source-Drain Reverse Recovery Time t <sub>rr</sub> I <sub>F</sub> = - 1.7 A, dI/dt = 1		I <sub>F</sub> = - 1.7 A, dl/dt = 100 A/μs		128	200		

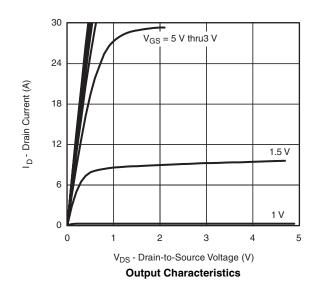
Notes:

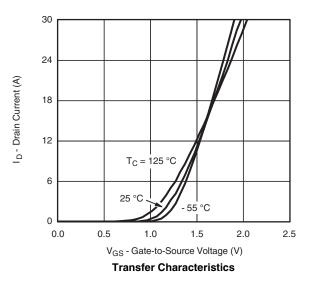
a. Pulse test; pulse width  $\leq$  300  $\mu s,$  duty cycle  $\leq$  2 %.

b. Guaranteed by design, not subject to production testing.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

#### TYPICAL CHARACTERISTICS 25 °C unless otherwise noted

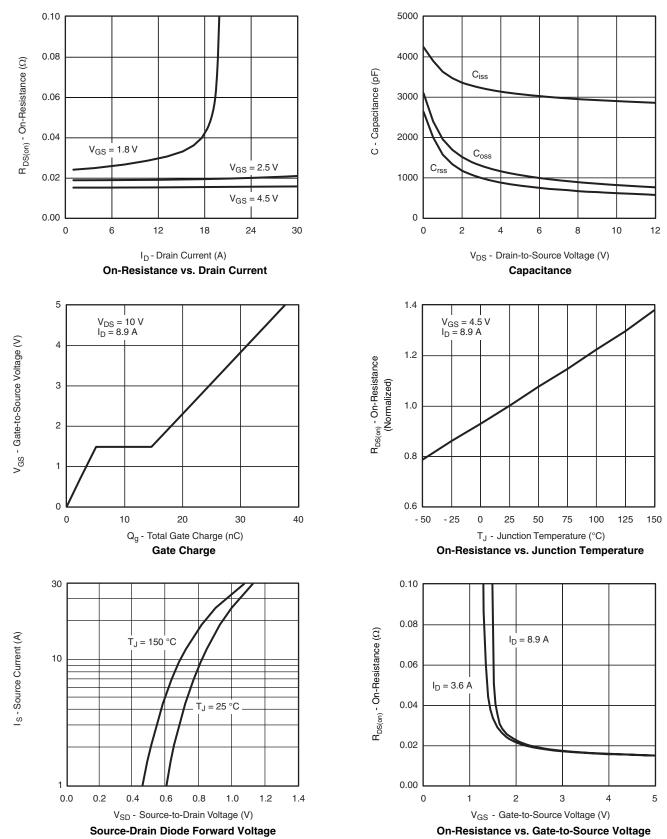




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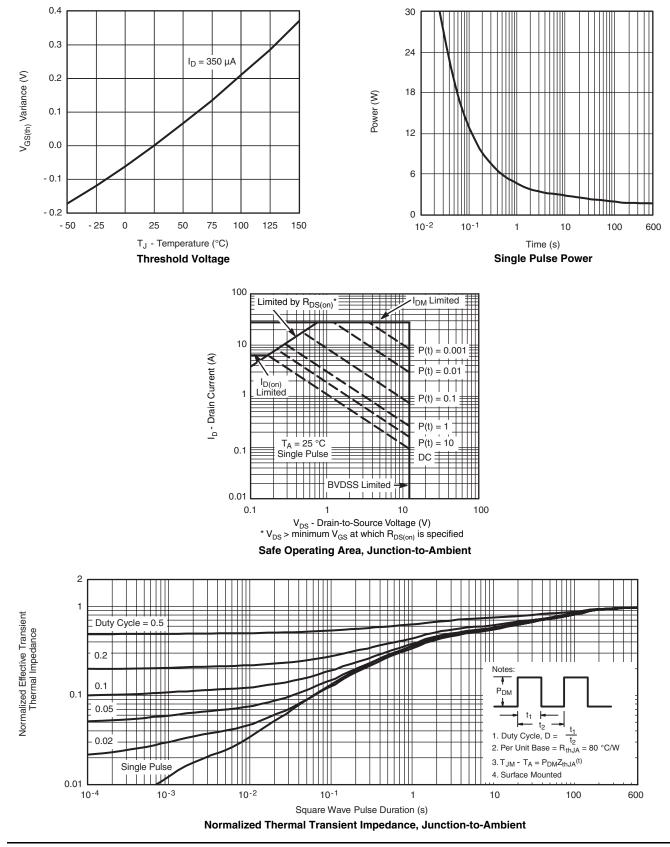


#### TYPICAL CHARACTERISTICS 25 °C unless otherwise noted



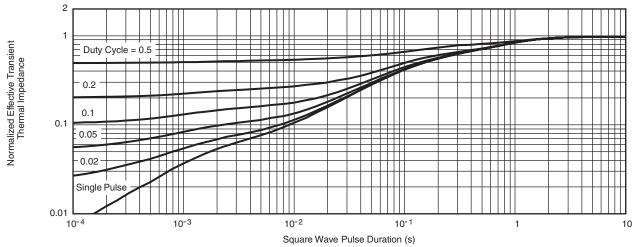


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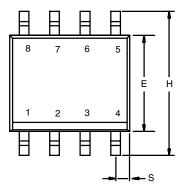
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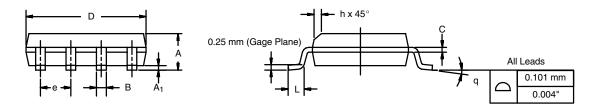


Normalized Thermal Transient Impedance, Junction-to-Foot



## SOIC (NARROW): 8-LEAD JEDEC Part Number: MS-012

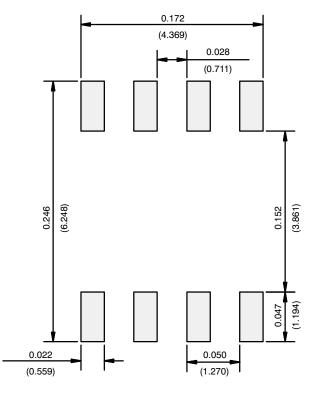




	MILLIM	IETERS	INCHES			
DIM	Min	Мах	Min	Max		
A	1.35	1.75	0.053	0.069		
A <sub>1</sub>	0.10	0.20	0.004	0.008		
В	0.35	0.51	0.014	0.020		
С	0.19	0.25	0.0075	0.010		
D	4.80	5.00	0.189	0.196		
E	3.80	4.00	0.150	0.157		
е	1.27	BSC	0.050 BSC			
н	5.80	6.20	0.228	0.244		
h	0.25	0.50	0.010	0.020		
L	0.50	0.93	0.020	0.037		
q	0°	8°	0°	8°		
S	0.44	0.64	0.018	0.026		
ECN: C-06527-Rev. I, 11-Sep-06 DWG: 5498						



#### **RECOMMENDED MINIMUM PADS FOR SO-8**



Recommended Minimum Pads Dimensions in Inches/(mm)

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