



Dual P-Channel 60-V (D-S) 175° MOSFET

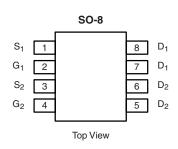
PRODUCT SUMMARY					
V _{DS} (V)	$R_{DS(on)}\left(\Omega\right)$	I _D (A)			
- 60	$0.120 \text{ at V}_{GS} = -10 \text{ V}$	- 3.1			
	0.150 at V _{GS} = - 4.5 V	- 2.8			

FEATURES

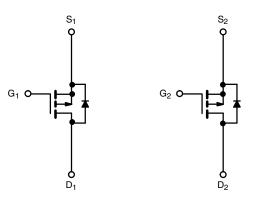
- Halogen-free According to IEC 61249-2-21 Definition
- TrenchFET[®] Power MOSFET
- Compliant to RoHS Directive 2002/95/EC



FREE



Ordering Information: Si4948BEY-T1-E3 (Lead (Pb)-free) Si4948BEY-T1-GE3 (Lead (Pb)-free and Halogen-free)



P-Channel MOSFET

P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS	T _A = 25 °C, unle	ss otherwise r	noted		
Parameter		Symbol	10 s	Steady State	Unit
Drain-Source Voltage		V _{DS}	- 60		V
Gate-Source Voltage		V _{GS}	± 20		
Continuous Dunin Comment /T 150 °C)	T _A = 25 °C	1	- 3.1	- 2.4	
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 70 °C	- I _D	- 2.6	- 2.0	
Pulsed Drain Current (10 µs Pulse Width)		I _{DM}	- 25		Α
Continuous Source Current (Diode Conduction) ^a		I _S	- 2	- 1.1	
Avalanche Current	L = 0.1 mH	I _{AS}	15 11		
Single Pulse Avalanche Energy	L = U. I IIII	E _{AS}			mJ
Mariana Barra Biraira di ang	T _A = 25 °C	P _D	2.4	1.4	
Maximum Power Dissipation ^a	T _A = 70 °C]	1.7	0.95	W
Operating Junction and Storage Temperature Range		T _J , T _{stg}	- 55 to 175		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Marrian In action to Austriant	t ≤ 10 s	R	53	62.5	
Maximum Junction-to-Ambient ^a	Steady State	R _{thJA}	85	110	°C/W
Maximum Junction-to-Foot	Steady State	R _{thJF}	30	37	

Notes:

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

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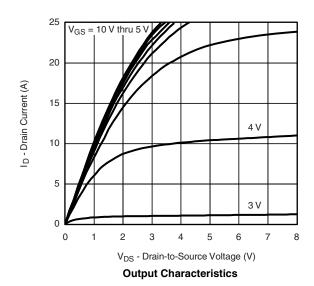
Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit	
Static	•						
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_{D} = -250 \mu A$	- 1		- 3	V	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			± 100	nA	
Zava Cata Valtaga Dvain Current	1	V _{DS} = - 60 V, V _{GS} = 0 V			- 1		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = - 60 V, V _{GS} = 0 V, T _J = 70 °C			- 10	μΑ	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = - 5 V, V _{GS} = - 10 V	- 25			Α	
	В	V _{GS} = - 10 V, I _D = - 3.1 A		0.100 0.120			
Drain-Source On-State Resistance ^a	R _{DS(on)}	$V_{GS} = -4.5 \text{ V}, I_D = -0.2 \text{ A}$		0.126	0.150	Ω	
Forward Transconductance ^a	9 _{fs}	V _{DS} = - 15 V, I _D = - 3.1 A		8.5		S	
Diode Forward Voltage ^a	V_{SD}	I _S = - 2 A, V _{GS} = 0 V		- 0.8	- 1.2	٧	
Dynamic ^b	L			I.			
Total Gate Charge	Qg			14.5	22		
Gate-Source Charge	Q _{gs}	$V_{DS} = -30 \text{ V}, V_{GS} = -10 \text{ V}, I_{D} = -3.1 \text{ A}$		2.2		nC	
Gate-Drain Charge	Q _{gd}			3.7			
Gate Resistance	R_g	f = 1 MHz		14		Ω	
Turn-On Delay Time	t _{d(on)}			10	15		
Rise Time	t _r	V_{DD} = - 30 V, R_L = 30 Ω		15	22		
Turn-Off Delay Time	t _{d(off)}	$\text{I}_\text{D}\cong$ - 1 A, V_GEN = - 10 V, R_g = 6 Ω		50	75	ns	
Fall Time	t _f			35	55		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = - 2 A, dl/dt = 100 A/μs		30	50		

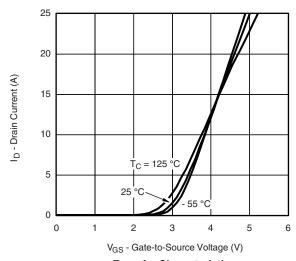
Notes:

- 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

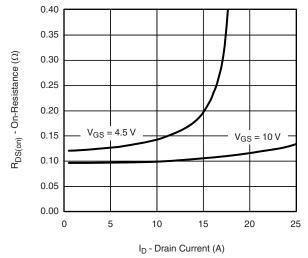




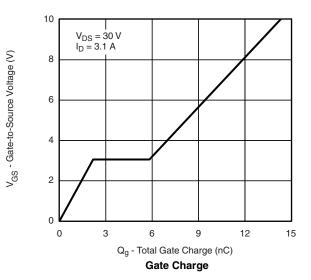


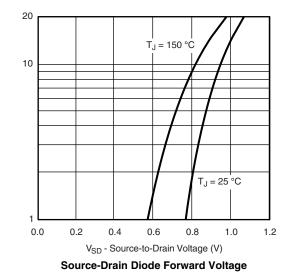


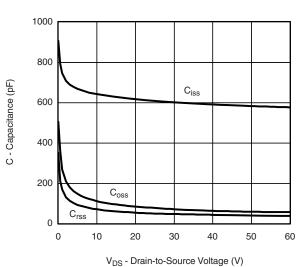
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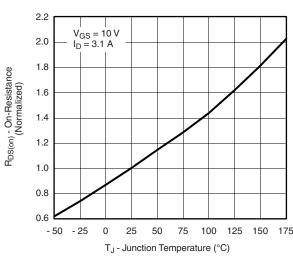
On-Resistance vs. Drain Current



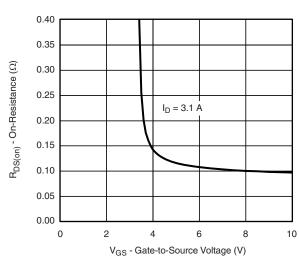




Capacitance



On-Resistance vs. Junction Temperature



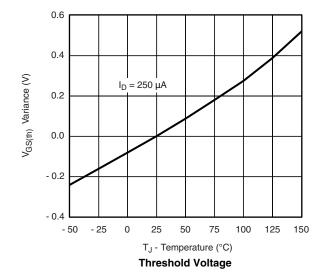
On-Resistance vs. Gate-to-Source Voltage

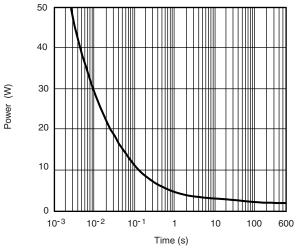
Is - Source Current (A)

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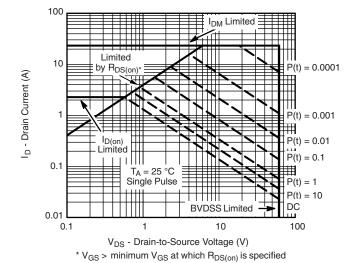
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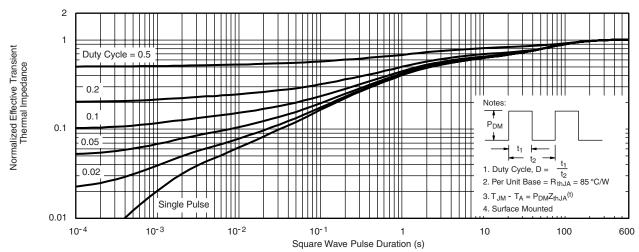




Single Pulse Power



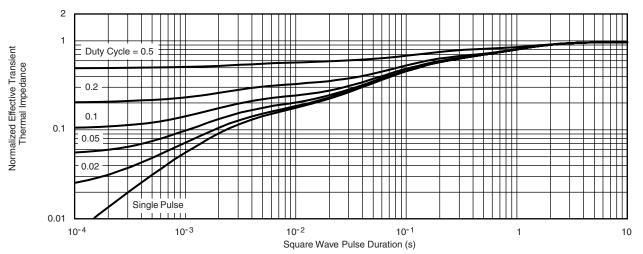
Safe Operating Area, Junction-to-Case



Normalized Thermal Transient Impedance, Junction-to-Ambient



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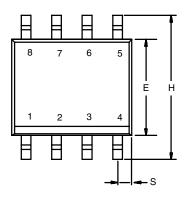


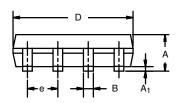
Normalized Thermal Transient Impedance, Junction-to-Foot

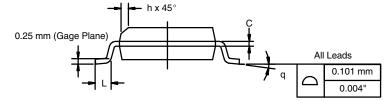
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SOIC (NARROW): 8-LEAD JEDEC Part Number: MS-012







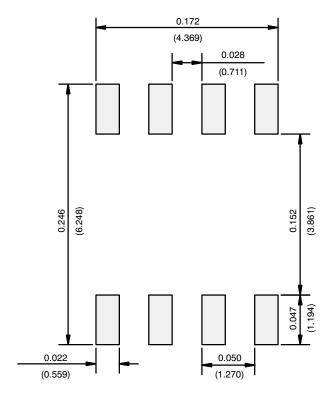
	MILLIM	IETERS	INC	INCHES		
DIM	Min	Max	Min	Max		
Α	1.35	1.75	0.053	0.069		
A ₁	0.10	0.20	0.004	0.008		
В	0.35	0.51	0.014	0.020		
С	0.19	0.25	0.0075	0.010		
D	4.80	5.00	0.189	0.196		
Е	3.80	4.00	0.150	0.157		
е	1.27	BSC	0.050 BSC			
Н	5.80	6.20	0.228	0.244		
h	0.25	0.50	0.010	0.020		
L	0.50	0.93	0.020	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

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RECOMMENDED MINIMUM PADS FOR SO-8



Recommended Minimum Pads Dimensions in Inches/(mm)

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