MMSD4148, SMMSD4148

Switching Diode

Features

- SOD-123 Surface Mount Package
- High Breakdown Voltage
- Fast Speed Switching Time
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable*
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V _R	100	V
Forward Current	l _F	200	mA
	I _{FSM}	1.0 2.0	Α
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	I _{FRM}	0.5	Α
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Typical Values

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR–5 Board (Note 2) $T_{A} = 25^{\circ}C$	P_{D}	425	mW
Derate above 25°C		3.4	mW/°C
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	290	°C/W

2. $FR-5 = 1.0 \text{ oz Cu}, 1.0 \text{ in}^2 \text{ pad}$



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SOD-123 CASE 425 STYLE 1



MARKING DIAGRAM



5I = Device Code

M = Date Code

= Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping [†]
MMSD4148T1G	SOD-123 (Pb-Free)	3,000 / Tape & Reel
SMMSD4148T1G*	SOD-123 (Pb-Free)	3,000 / Tape & Reel
MMSD4148T3G	SOD-123 (Pb-Free)	10,000 / Tape & Reel
SMMSD4148T3G*	SOD-123 (Pb-Free)	10,000 / Tape & Reel

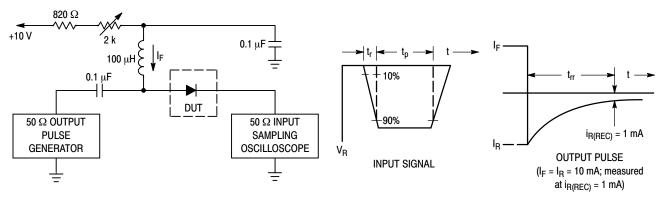
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS	•			
Reverse Breakdown Voltage (I _{BR} = 100 μA)	V _(BR)	100	_	V
Reverse Voltage Leakage Current $(V_R = 20 \text{ V})$ $(V_R = 75 \text{ V})$	I _R	- -	25 5.0	nA μA
Forward Voltage (I _F = 10 mA)	V _F	_	1000	mV
Diode Capacitance (V _R = 0 V, f = 1.0 MHz)	C _D	-	4.0	pF
Reverse Recovery Time (I _F = I _R = 10 mA) (Figure 1)	t _{rr}	_	4.0	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



- 1. A 2.0 $k\Omega$ variable resistor adjusted for a Forward Current (IF) of 10 mA.
- 2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
- 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

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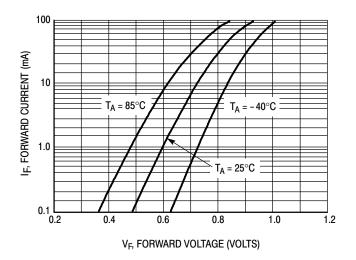


Figure 2. Forward Voltage

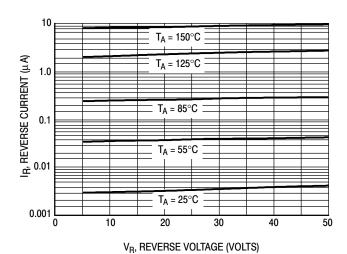


Figure 3. Leakage Current

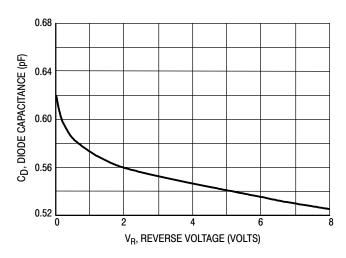


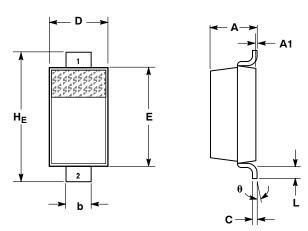
Figure 4. Capacitance



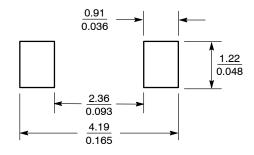
SOD-123 CASE 425-04 ISSUE G

DATE 07 OCT 2009





SOLDERING FOOTPRINT*



SCALE 10:1

- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI
- Y14.5M, 1982. 2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS				INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX	
Α	0.94	1.17	1.35	0.037	0.046	0.053	
A1	0.00	0.05	0.10	0.000	0.002	0.004	
b	0.51	0.61	0.71	0.020	0.024	0.028	
С			0.15			0.006	
D	1.40	1.60	1.80	0.055	0.063	0.071	
Е	2.54	2.69	2.84	0.100	0.106	0.112	
HE	3.56	3.68	3.86	0.140	0.145	0.152	
L	0.25			0.010			
θ	0°		10°	0°		10°	

GENERIC MARKING DIAGRAM*



XXX = Specific Device Code

= Date Code

= Pb-Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot " •", may or may not be present.

STYLE 1: PIN 1. CATHODE 2. ANODE

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DESCRIPTION:	SOD-123		PAGE 1 OF 1	

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^{*}For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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