MMSD4148, SMMSD4148

Switching Diode

Features

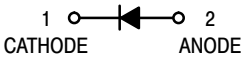
- SOD−123 Surface Mount Package
- High Breakdown Voltage
- Fast Speed Switching Time
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable*
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

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SOD−123
CASE 425
STYLE 1



MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Continuous Reverse Voltage		V_R	100	V
Forward Current		I_F	200	mA
Forward Surge Current (Note 1)	t < 1 sec t = 1 μsec	I_{FSM}	1.0 2.0	A
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)		I_{FRM}	0.5	A
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.

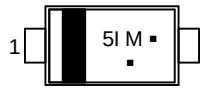
1. Typical Values

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR−5 Board (Note 2) T_A = 25°C Derate above 25°C	P_D	425 3.4	mW mW/°C
Thermal Resistance Junction−to−Ambient	$R_{\theta JA}$	290	°C/W

2. FR−5 = 1.0 oz Cu, 1.0 in^2 pad

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

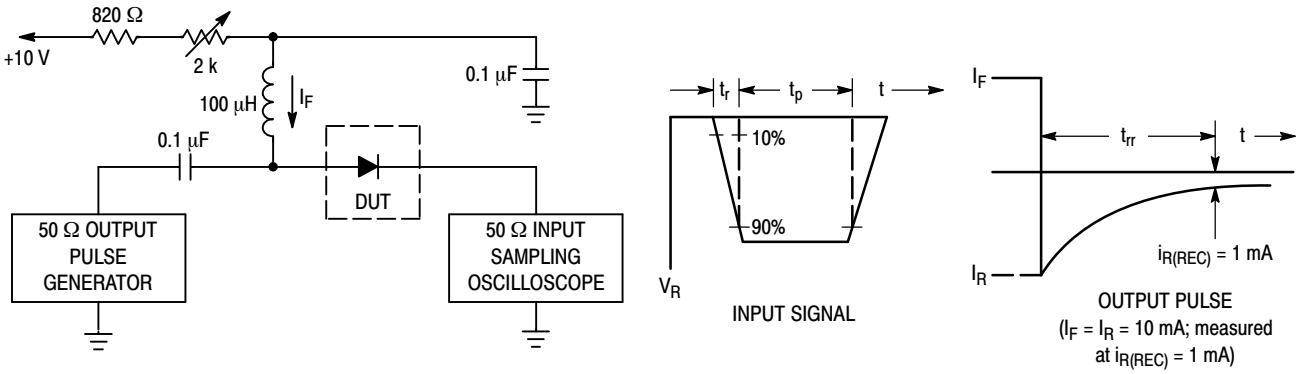
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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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 V) (V_R = 75 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 kΩ variable resistor adjusted for a Forward Current (I_F) 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

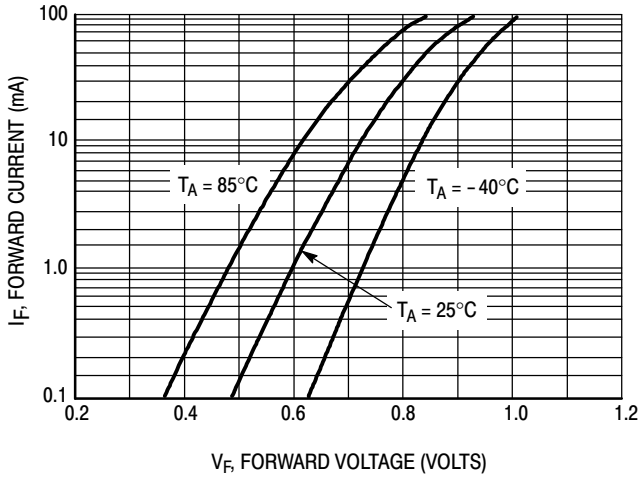


Figure 2. Forward Voltage

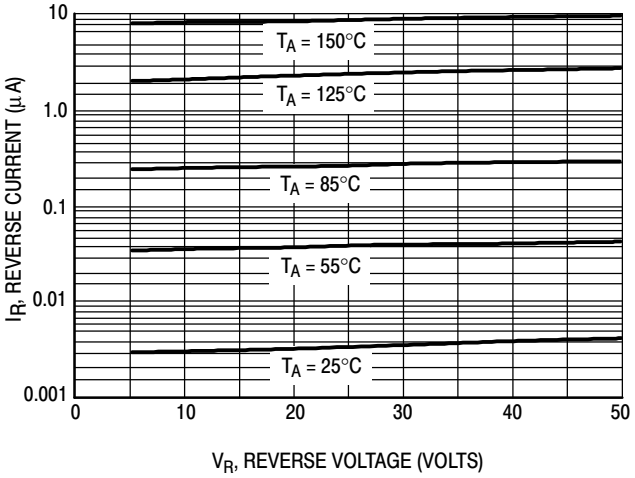


Figure 3. Leakage Current

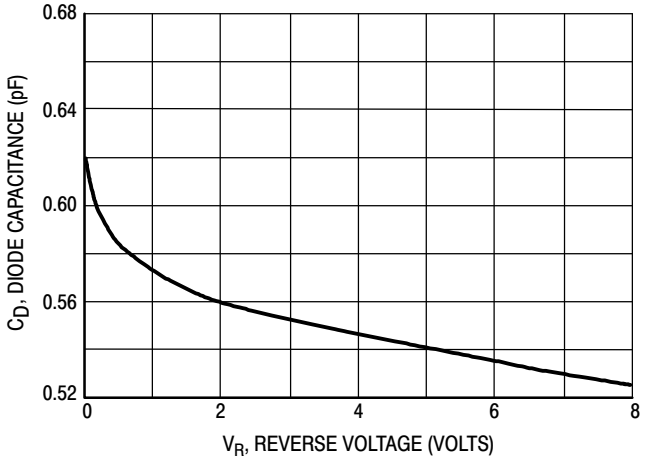
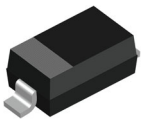


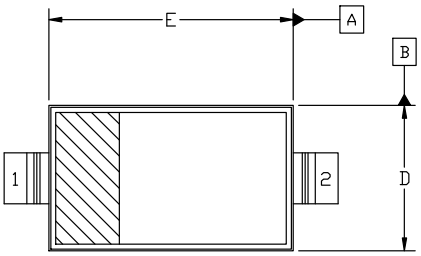
Figure 4. Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

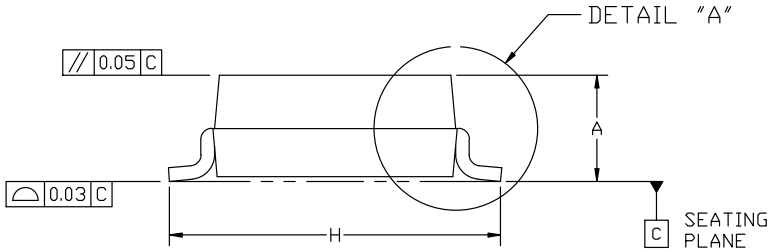


SOD−123 2L 1.60x2.69x1.16
CASE 425
ISSUE H

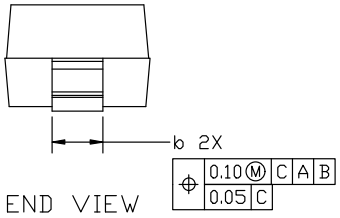
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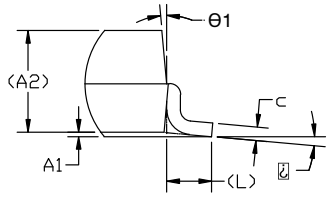
TOP VIEW



SIDE VIEW



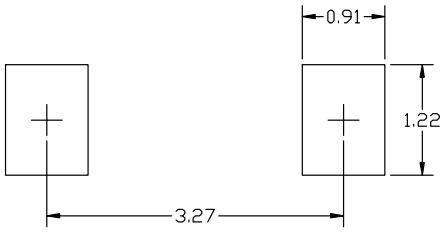
END VIEW



DETAIL "A"

NOTES:
1. DIMENSION AND TOLERANCING PER ASME Y14.5M, 2018
2. CONTROLLING DIMENSION: MILLIMETERS

	MILLIMETER		
DIM	MIN.	NOM.	MAX.
A	0.94	1.17	1.35
A1	0.00	0.05	0.10
A2		1.16 REF.	
b	0.51	0.61	0.71
c	–	–	0.15
D	1.40	1.60	1.80
E	2.54	2.69	2.84
H	3.56	3.68	3.86
L		0.25 REF.	
∠	0°		10°
θ1	0°		10°



RECOMMENDED MOUNTING FOOTPRINT

*For additional information on or Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference manual SOLDERRM/D.

GENERIC MARKING DIAGRAM*



XXX = Specific Device Code
M = 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. Some products may not follow the Generic Marking.

STYLE 1:
PIN 1. CATHODE
2. ANODE

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