MMSD4148T1

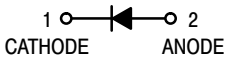
Switching Diode

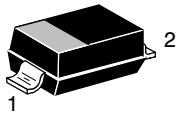
Features

- SOD−123 Surface Mount Package
- High Breakdown Voltage
- Fast Speed Switching Time
- Pb−Free Packages are Available

ON Semiconductor®

http://onsemi.com





SOD−123
CASE 425
STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V_R	100	V
Peak Forward Current	I_F	200	mA
Peak Forward Surge Current t < 1 sec (Note 1) t = 1 μsec	I_{FSM}	1.0 2.0	A
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150	°C

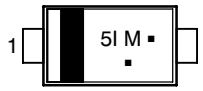
THERMAL CHARACTERISTICS

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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Typical Values
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)

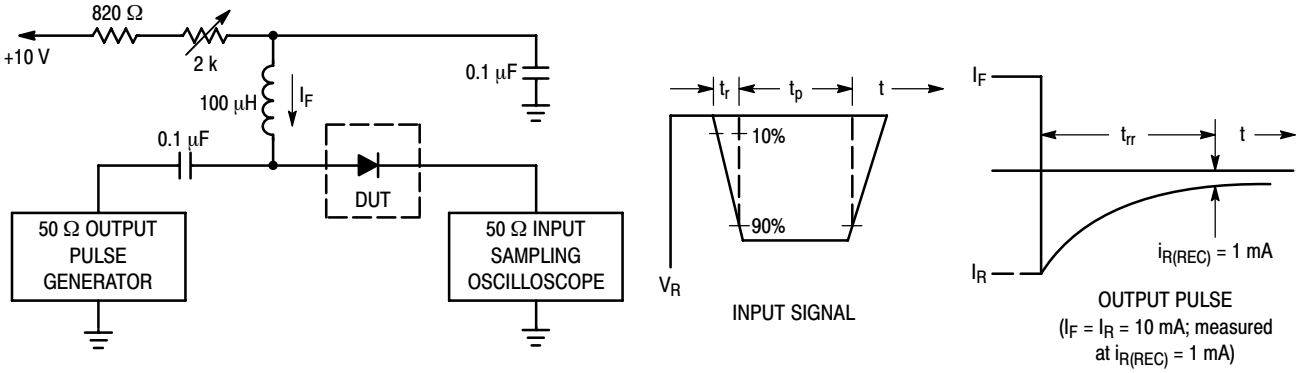
ORDERING INFORMATION

Device	Package	Shipping†
MMSD4148T1	SOD−123	3000 / Tape & Reel
MMSD4148T1G	SOD−123 (Pb−Free)	3000 / Tape & Reel
MMSD4148T3	SOD−123	10,000 / Tape & Reel
MMSD4148T3G	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.

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



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

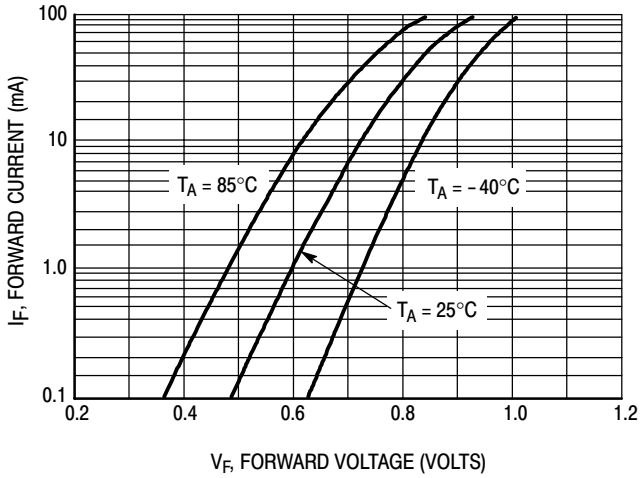


Figure 2. Forward Voltage

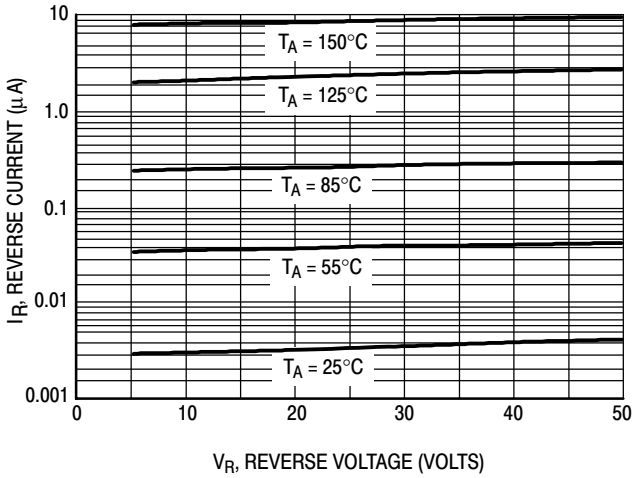


Figure 3. Leakage Current

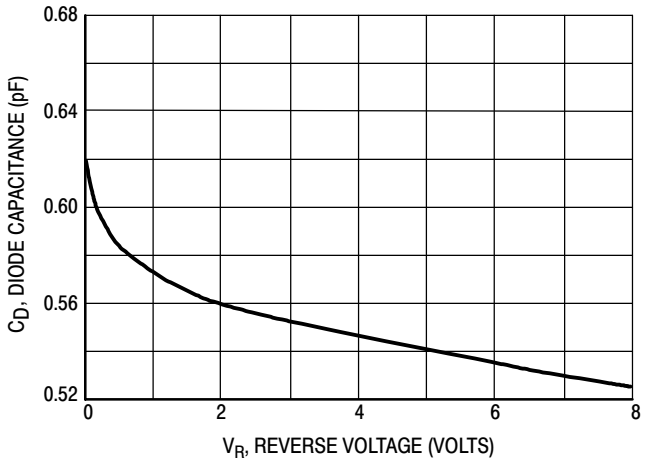
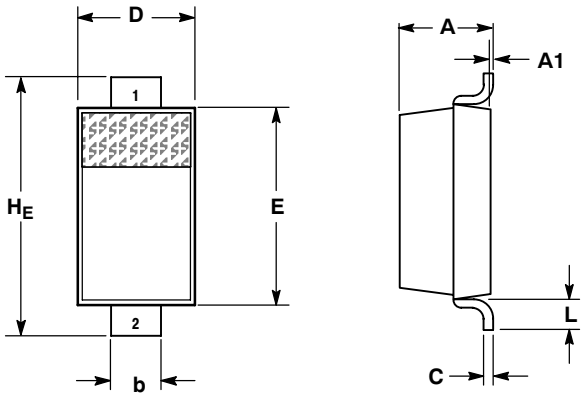


Figure 4. Capacitance

PACKAGE DIMENSIONS

SOD−123
CASE 425−04
ISSUE E

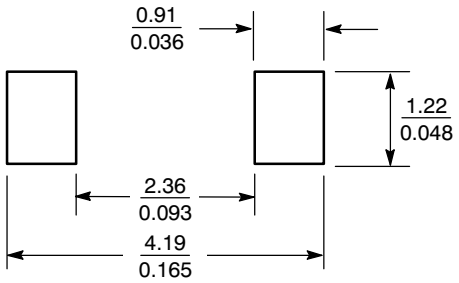


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	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
c	---	---	0.15	---	---	0.006
D	1.40	1.60	1.80	0.055	0.063	0.071
E	2.54	2.69	2.84	0.100	0.106	0.112
H_E	3.56	3.68	3.86	0.140	0.145	0.152
L	0.25	---	---	0.010	---	---

STYLE 1:
PIN 1. CATHODE
2. ANODE

SOLDERING FOOTPRINT*



SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

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

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
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