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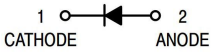
MMSD4148T1G
Switching Diode

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
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant*



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 (Note 1)	t < 1 sec t = 1 μsec	I_{FSM}	1.0 2.0	A
Operating and Storage Junction Temperature Range		T_J, T_{stg}	−55 to +150	°C

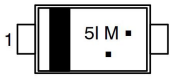
THERMAL CHARACTERISTICS

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

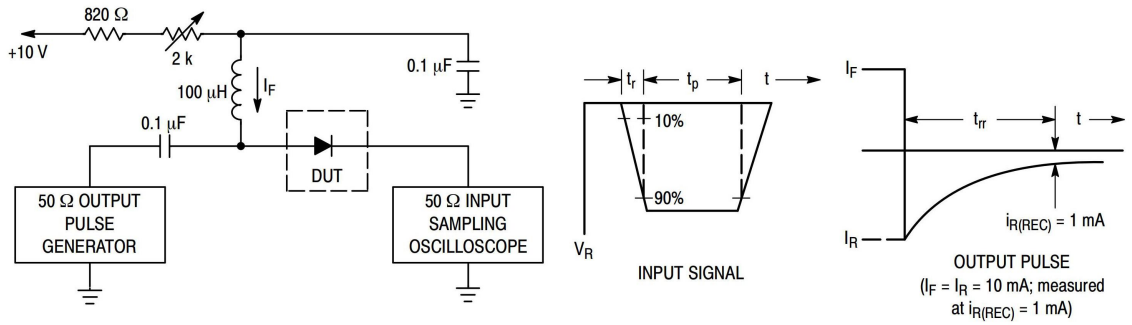
(Note: Microdot may be in either location)

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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



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

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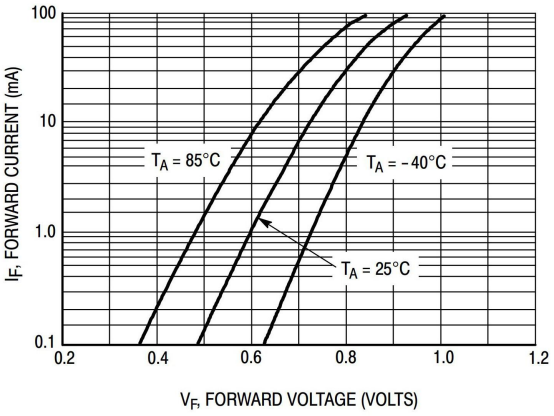


Figure 2. Forward Voltage

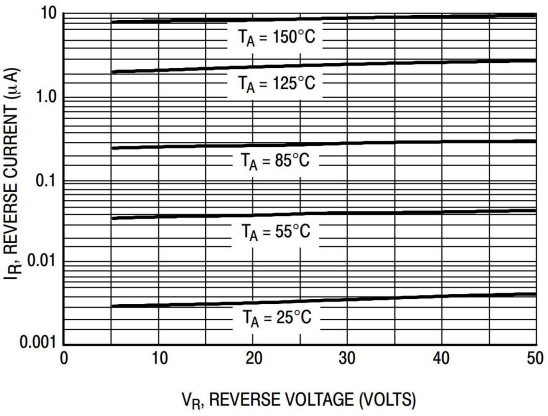


Figure 3. Leakage Current

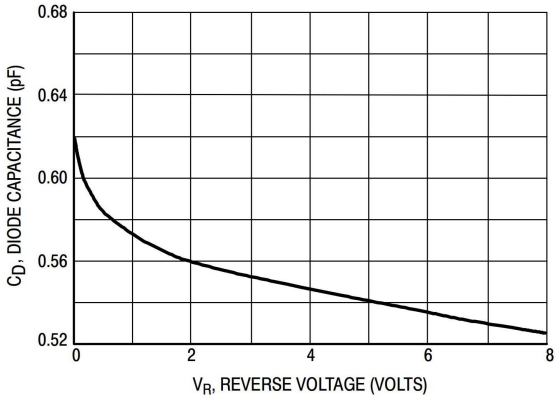


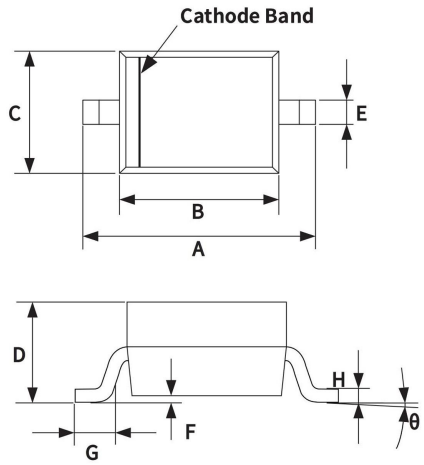
Figure 4. Capacitance

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Ordering Information

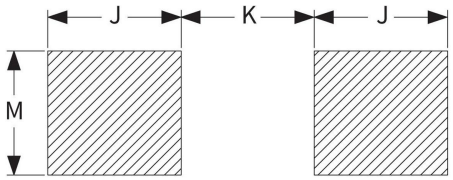
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123	R1	0.012	3000	30000	240000	7''

Package Outline Dimensions (SOD-123)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.55	3.85	0.140	0.152
B	2.55	2.85	0.100	0.112
C	1.40	1.80	0.055	0.071
D	0.95	1.35	0.140	0.152
E	0.51	0.71	0.037	0.053
F	-	0.15	-	0.006
G	0.15	0.45	0.006	0.008
H	0.08	0.25	0.003	0.010
θ	-	8°	-	8°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.91	-	0.036	-
K	-	2.36	-	0.092
M	1.22	-	0.048	-