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MMSD103T1G
High Voltage Switching Diode

Features

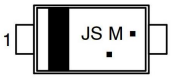
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant*



SOD−123
CASE 425
STYLE 1



MARKING DIAGRAM



JS = Device Code
M = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V_R	250	V
Peak Forward Current	I_F	200	mA
Peak Forward Surge Current	$I_{FM(surge)}$	625	mA

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Forward Power Dissipation, FR−5 Board (Note 1) @ T_A = 25°C Derate above 25°C	P_F	400 3.2	mW mW/°C
Thermal Resistance, Junction−to−Case	$R_{\theta JL}$	174	°C/W
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	492	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

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.

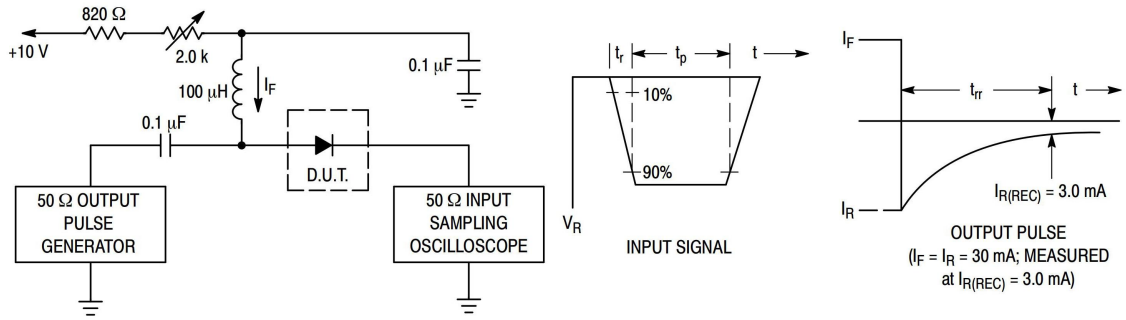
1. FR−5 = 1.0 × 0.75 × 0.062 in.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Voltage Leakage Current (V_R = 200 V) (V_R = 200 V, T_J = 150°C)	I_R	 – –	 1.0 100	μA
Reverse Breakdown Voltage (I_{BR} = 100 μA)	$V_{(BR)}$	250	–	V
Forward Voltage (I_F = 100 mA) (I_F = 200 mA)	V_F	 – –	 1000 1250	mV
Diode Capacitance (V_R = 0, f = 1.0 MHz)	C_D	–	5.0	pF
Reverse Recovery Time (I_F = I_R = 30 mA, R_L = 100 Ω)	t_{rr}	–	50	ns



Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 30 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 30 mA.
3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

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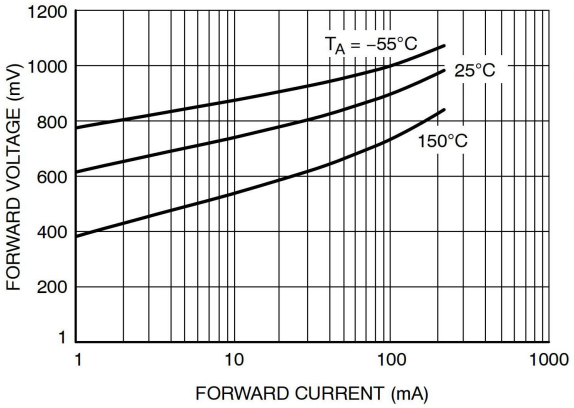


Figure 2. Forward Voltage

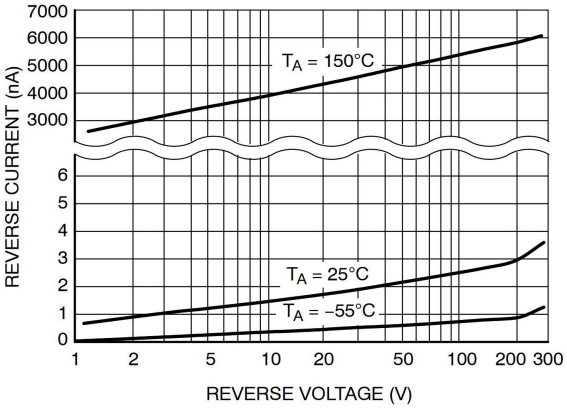


Figure 3. Reverse Leakage

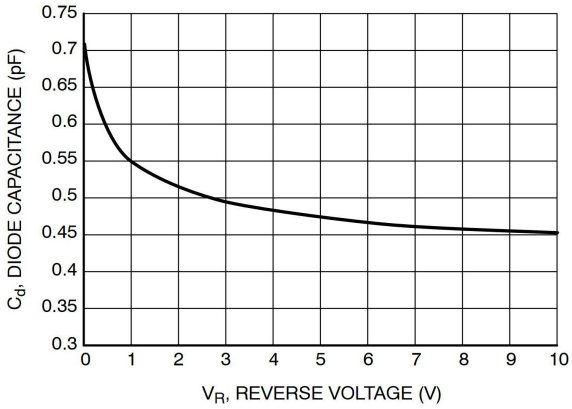


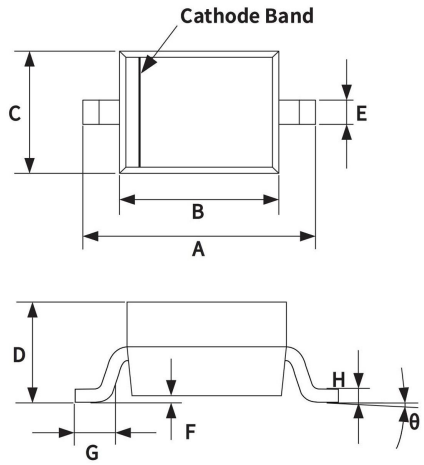
Figure 4. Diode Capacitance

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Ordering Information

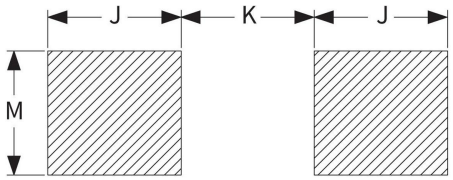
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123	R1	0.012	3000	30000	240000	7''

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	-