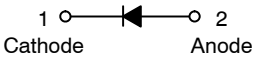
High Voltage Switching Diode

MMSD103T1G, SMMSD103T1G

SOD−123
CASE 425
STYLE 1

Features

- AEC−Q101 Qualified and PPAP Capable
- 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*



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.

ORDERING INFORMATION

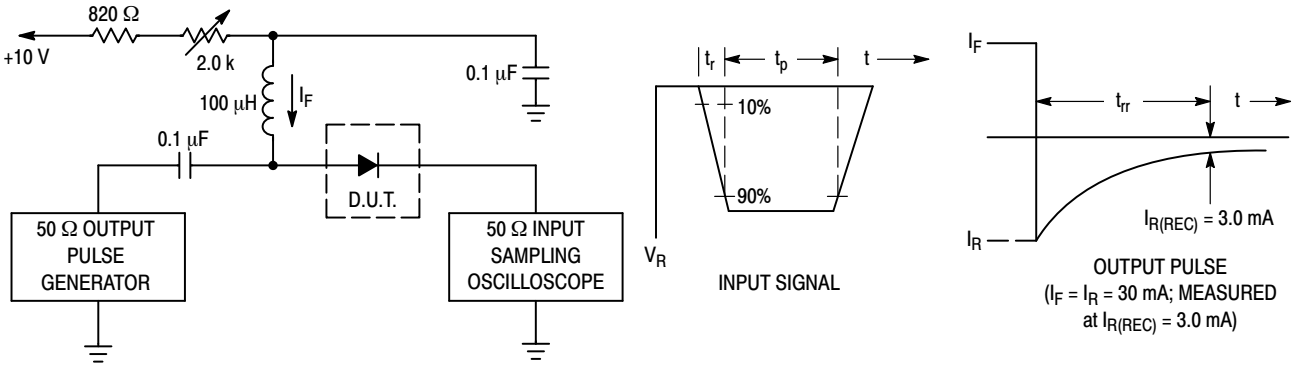
Device	Package	Shipping†
MMSD103T1G	SOD−123 (Pb−Free)	3,000 / Tape & Reel
SMMSD103T1G	SOD−123 (Pb−Free)	3,000 / Tape & Reel

†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.

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

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

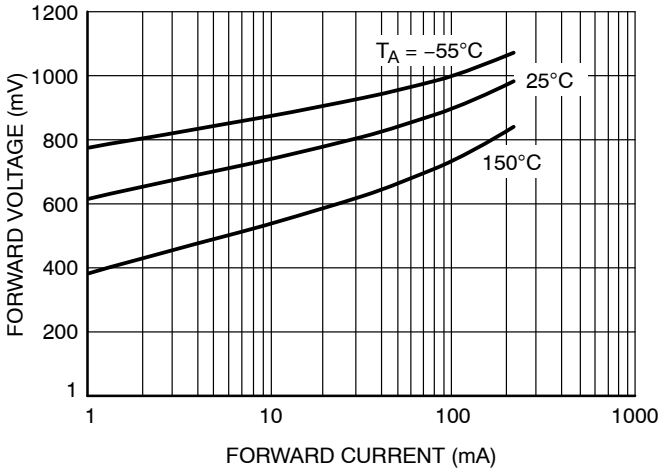


Figure 2. Forward Voltage

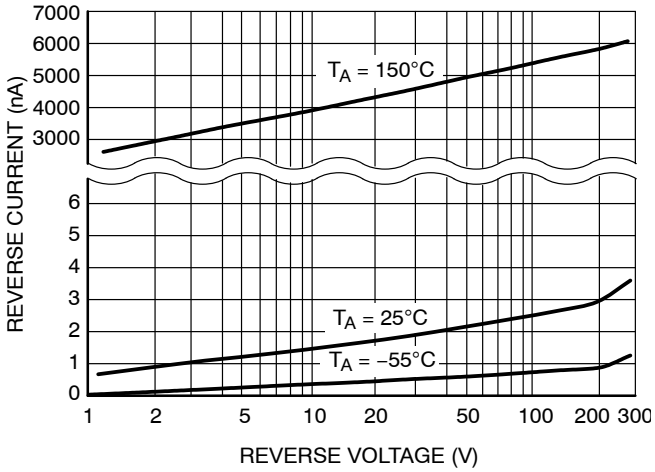


Figure 3. Reverse Leakage

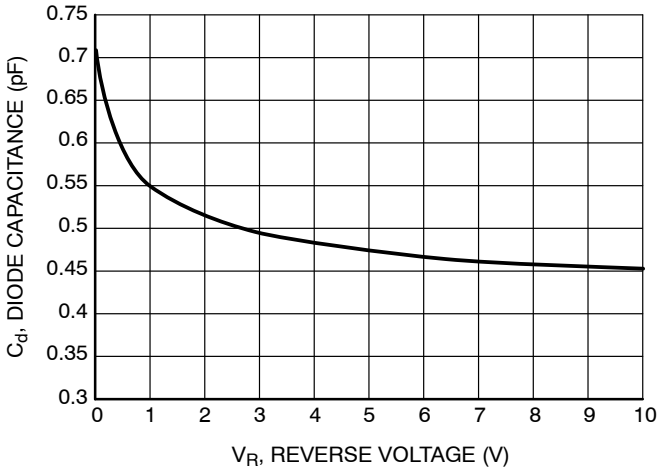
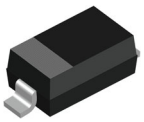
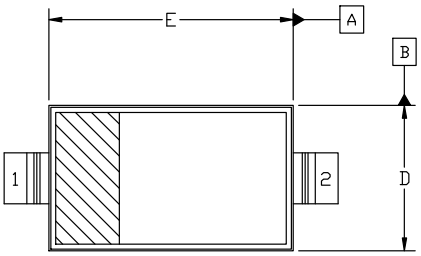


Figure 4. Diode Capacitance

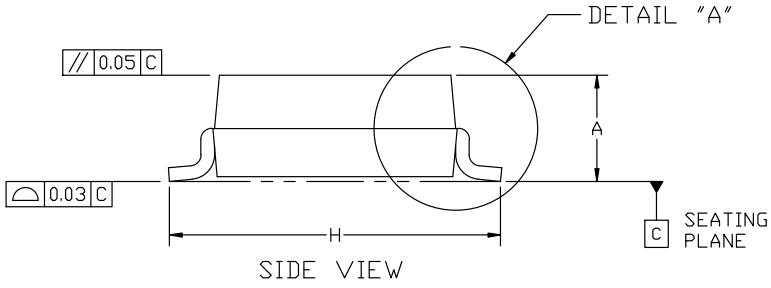


SOD−123 2−LEAD, 1.60x2.69x1.16
CASE 425
ISSUE H

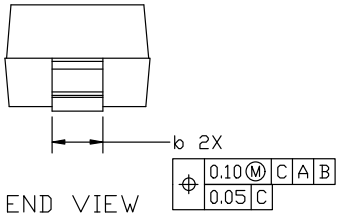
DATE 29 FEB 2024



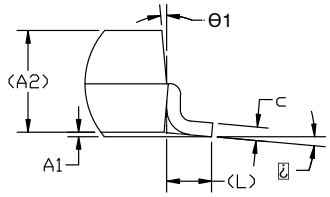
TOP VIEW



SIDE VIEW



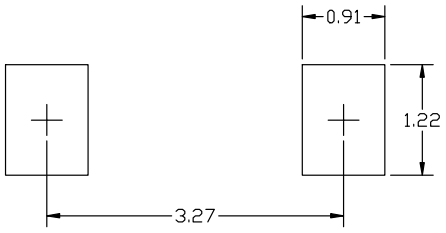
END VIEW



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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DESCRIPTION:	**SOD−123 2−LEAD, 1.60x2.69x1.16**	**PAGE 1 OF 1**

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