

# High-Speed Switching Diode

## 1SS400T1G, NSV1SS400T1G

### Features

- High-Speed Switching Applications
- Lead Finish: 100% Matte Sn (Tin)
- Qualified Maximum Reflow Temperature: 260°C
- Extremely Small SOD-523 Package
- NSV 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

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

Rating	Symbol	Max	Unit
Reverse Voltage	$V_R$	100	V
Forward Current	$I_F$	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1) @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	200 1.57	mW mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage 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.

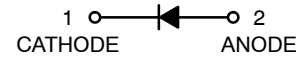
1. FR-4 @ Minimum Pad.

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

Characteristic	Symbol	Min	Max	Unit
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#### OFF CHARACTERISTICS

Reverse Voltage Leakage Current ( $V_R = 80\text{ Vdc}$ )	$I_R$	–	0.1	$\mu\text{Adc}$
Diode Capacitance ( $V_R = 0\text{ V}$ , $f = 1.0\text{ MHz}$ )	$C_D$	–	3.0	pF
Forward Voltage ( $I_F = 100\text{ mAdc}$ )	$V_F$	–	1.2	Vdc
Reverse Recovery Time ( $I_F = I_R = 10\text{ mAdc}$ )	$t_{rr}$	–	4.0	ns



SOD-523  
CASE 502  
PLASTIC

### MARKING DIAGRAM



A = Device Code  
M = Date Code\*  
■ = Pb-Free Package

(Note: Microdot may be in either location)

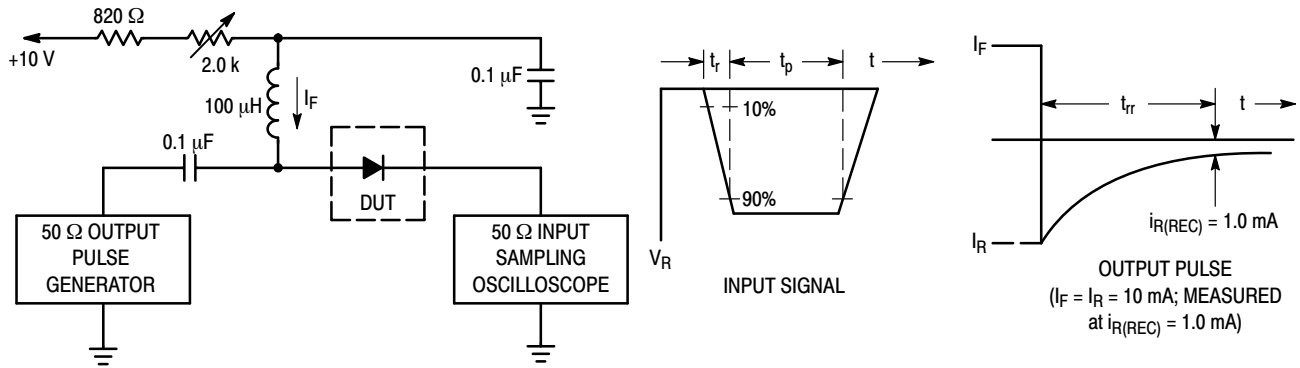
\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

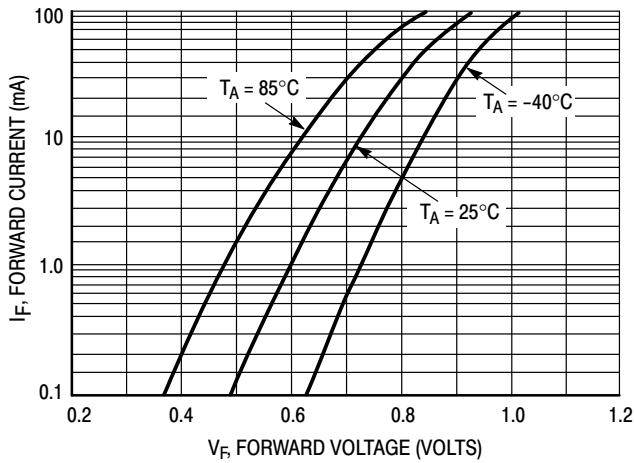
Device	Package	Shipping <sup>†</sup>
1SS400T1G	SOD-523 (Pb-Free)	3000 / Tape & Reel
1SS400T5G	SOD-523 (Pb-Free)	8000 / Tape & Reel
NSV1SS400T1G	SOD-523 (Pb-Free)	3000 / Tape & Reel
NSV1SS400T5G	SOD-523 (Pb-Free)	8000 / Tape & Reel

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

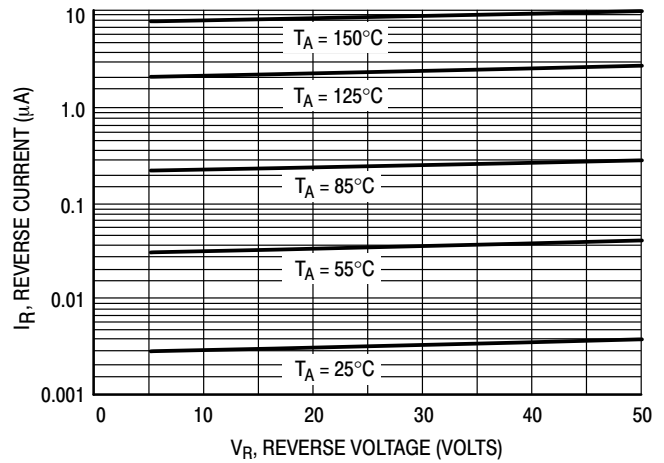
# 1SS400T1G, NSV1SS400T1G



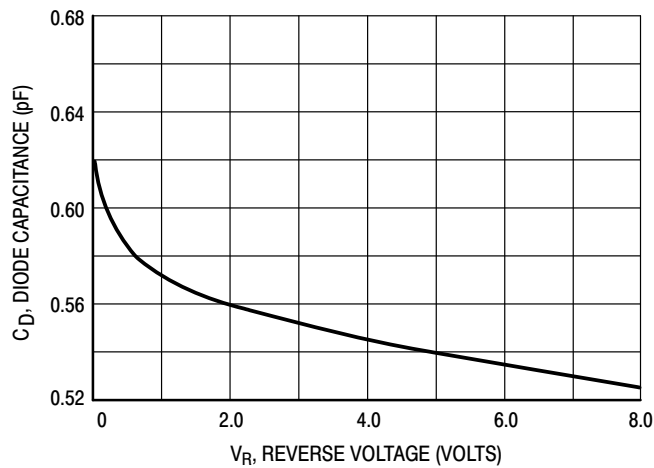
**Figure 1. Recovery Time Equivalent Test Circuit**



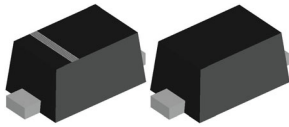
**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

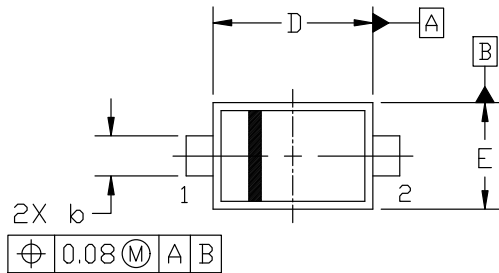


**Figure 4. Capacitance**

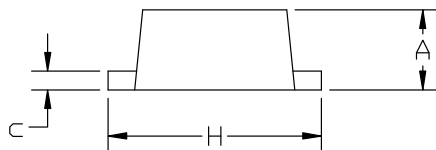


**SOD-523 1.20x0.80x0.60**  
**CASE 502**  
**ISSUE F**

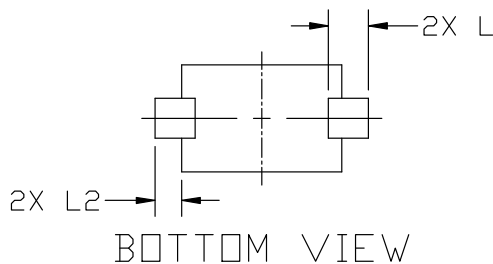
DATE 08 FEB 2024



TOP VIEW

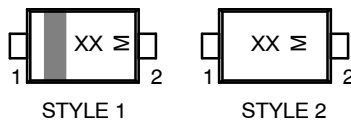


SIDE VIEW



BOTTOM VIEW

**GENERIC**  
**MARKING DIAGRAM\***



XX = Specific Device Code  
M Date Code

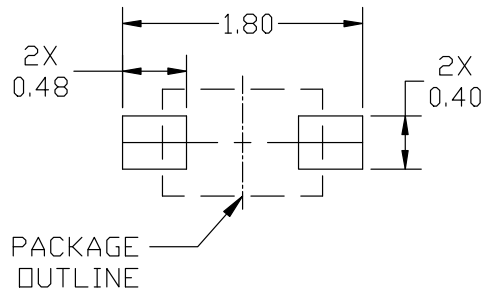
\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

STYLE 1: PIN 1: CATHODE (POLARITY BAND)  
2: ANODE  
STYLE 2: NO POLARITY

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH, MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.50	0.60	0.70
b	0.25	0.30	0.35
c	0.07	0.14	0.20
D	1.10	1.20	1.30
E	0.70	0.80	0.90
H	1.50	1.60	1.70
L	0.30 REF		
L2	0.15	0.20	0.25



**RECOMMENDED MOUNTING**  
**FOOTPRINT**

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

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