

# 1SS400T1G, NSV1SS400T1G

## High-Speed Switching Diode

### Features

- High-Speed Switching Applications
- Lead Finish: 100% Matte Sn (Tin)
- Qualified Maximum Reflow Temperature: 260°C
- Extremely Small SOD-523 Package
- AEC-Q101 Qualified and PPAP Capable
- NSV 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

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Rating	Symbol	Max	Unit
Reverse Voltage	V <sub>R</sub>	100	V
Forward Current	I <sub>F</sub>	200	mAdc
Peak Forward Surge Current	I <sub>FM(surge)</sub>	500	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1) @T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	200 1.57	mW mW/°C
Thermal Resistance, Junction-to-Ambient	R <sub>θJA</sub>	635	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-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-4 @ Minimum Pad.

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
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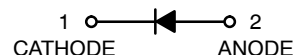
### OFF CHARACTERISTICS

Reverse Voltage Leakage Current (V <sub>R</sub> = 80 Vdc)	I <sub>R</sub>	-	0.1	μAdc
Diode Capacitance (V <sub>R</sub> = 0 V, f = 1.0 MHz)	C <sub>D</sub>	-	3.0	pF
Forward Voltage (I <sub>F</sub> = 100 mAdc)	V <sub>F</sub>	-	1.2	Vdc
Reverse Recovery Time (I <sub>F</sub> = I <sub>R</sub> = 10 mAdc)	t <sub>rr</sub>	-	4.0	ns



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SOD-523  
CASE 502  
PLASTIC

### MARKING DIAGRAM



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

(Note: Microdot may be in either location)

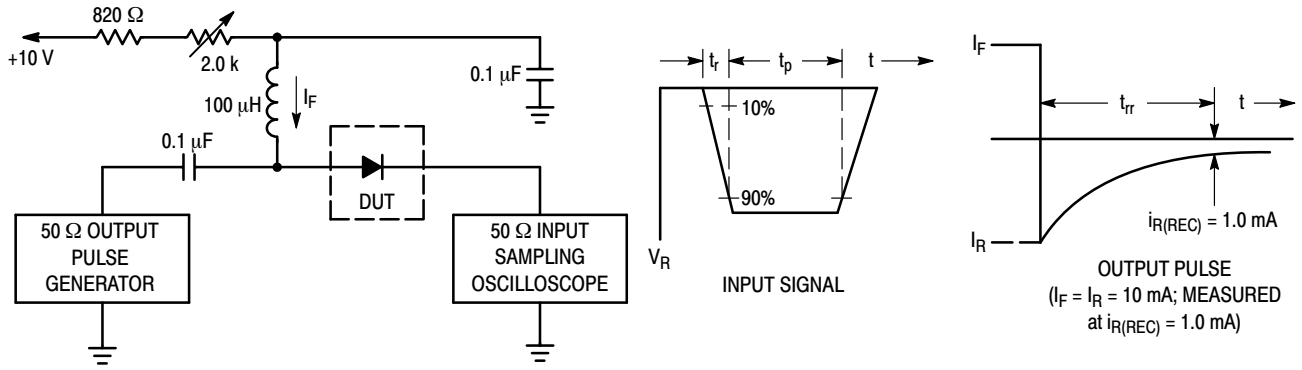
\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

Device	Package	Shipping†
1SS400T1G	SOD-523 (Pb-Free)	3000 / Tape & Reel
NSV1SS400T1G	SOD-523 (Pb-Free)	3000 / Tape & Reel

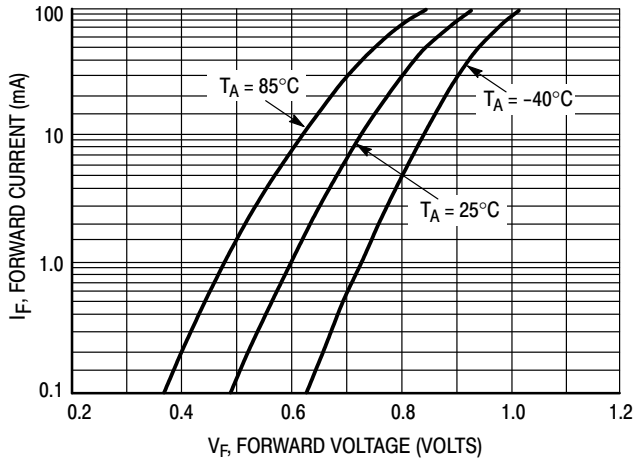
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

# 1SS400T1G, NSV1SS400T1G

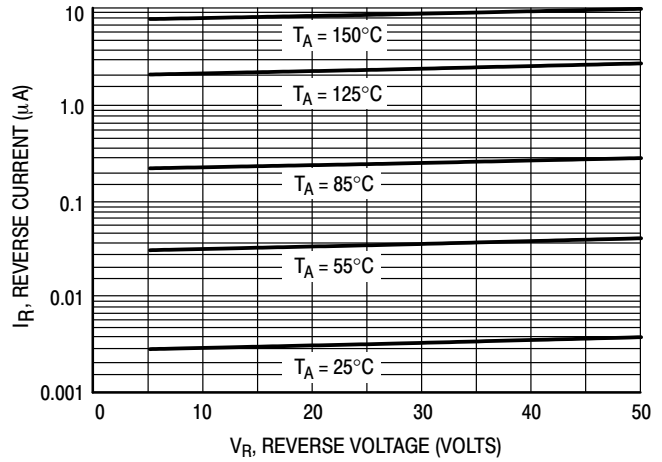


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

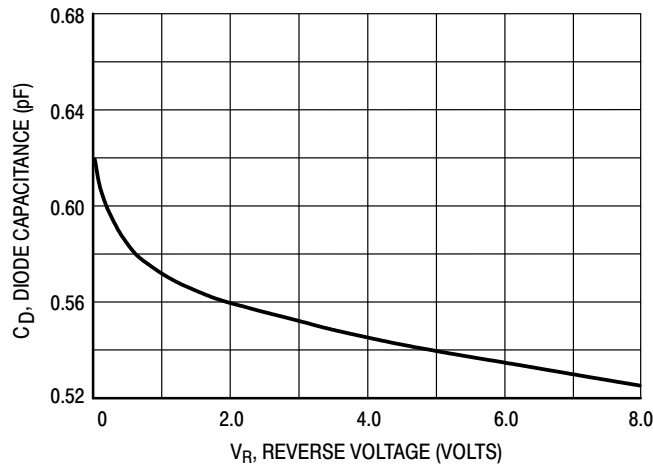
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

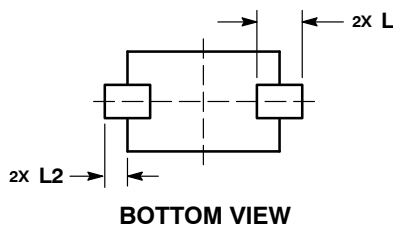
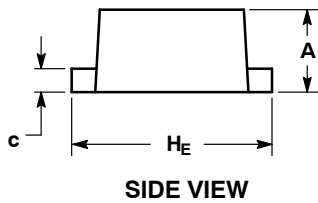
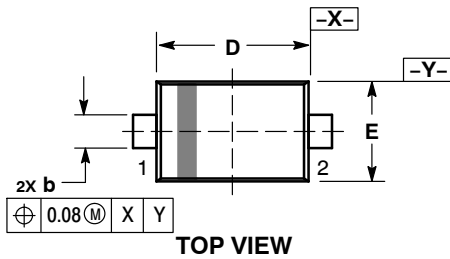


**Figure 4. Capacitance**

# 1SS400T1G, NSV1SS400T1G

## PACKAGE DIMENSIONS

SOD-523  
CASE 502-01  
ISSUE E

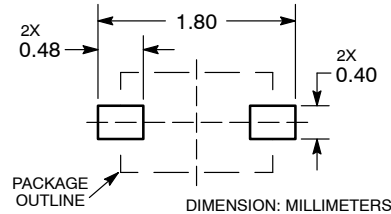


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
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 E	1.50	1.60	1.70
L	0.30 REF		
L2	0.15	0.20	0.25

**RECOMMENDED  
SOLDERING 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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