

# 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<br>FR-5 Board (Note 1) @ $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 200<br>1.57    | mW<br>mW/°C |
| Thermal Resistance, Junction-to-Ambient                                                                       | $R_{\theta JA}$ | 635            | °C/W        |
| Junction and Storage Temperature Range                                                                        | $T_J, T_{stg}$  | -55 to<br>+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.

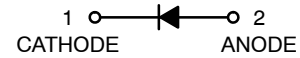
1. FR-4 @ Minimum Pad.

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

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

#### OFF CHARACTERISTICS

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

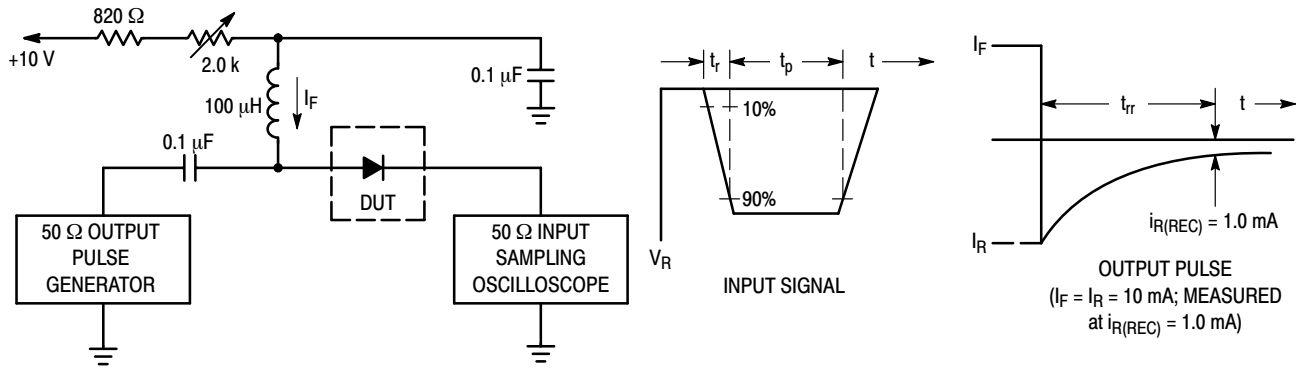
\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

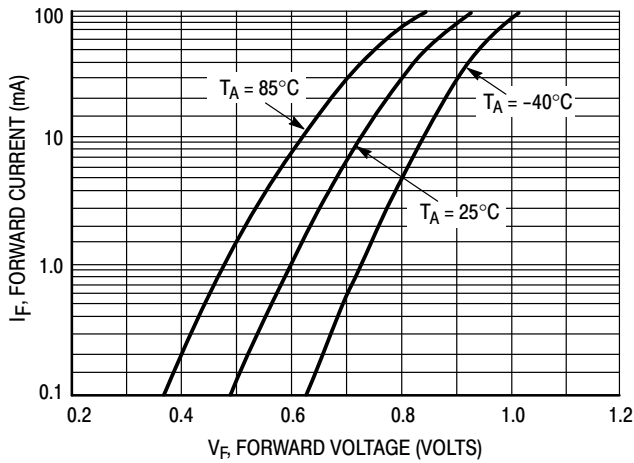
| Device       | Package              | Shipping <sup>†</sup> |
|--------------|----------------------|-----------------------|
| 1SS400T1G    | SOD-523<br>(Pb-Free) | 3000 / Tape & Reel    |
| 1SS400T5G    | SOD-523<br>(Pb-Free) | 8000 / Tape & Reel    |
| NSV1SS400T1G | SOD-523<br>(Pb-Free) | 3000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

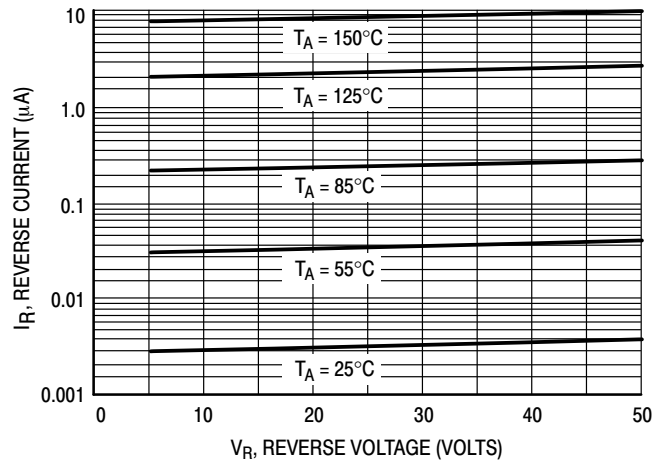
# 1SS400T1G, NSV1SS400T1G



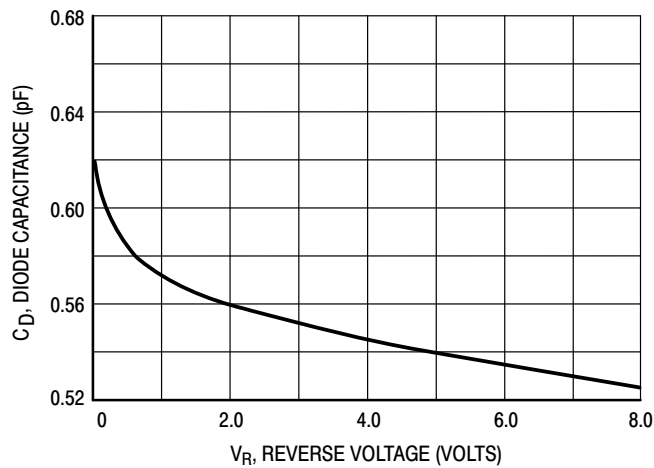
**Figure 1. Recovery Time Equivalent Test Circuit**



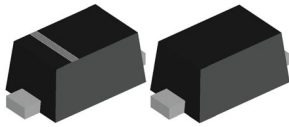
**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Capacitance**



### SOD-523 1.20x0.80x0.60

#### CASE 502

#### ISSUE F

DATE 08 FEB 2024



TOP VIEW

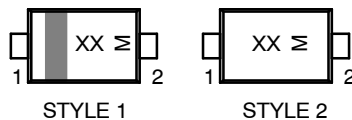


SIDE VIEW



BOTTOM VIEW

### GENERIC MARKING DIAGRAM\*



XX = Specific Device Code  
M Date Code

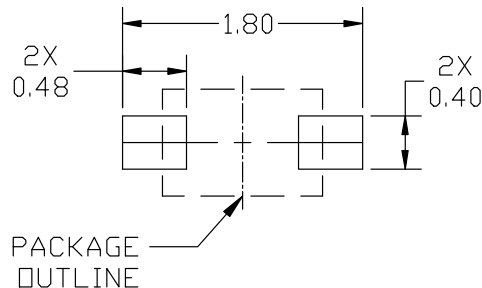
\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

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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