# 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
- 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°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°C<br>Derate above 25°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 +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**

| Characteristic | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | |
| Reverse Voltage Leakage Current ($V_R$ = 80 Vdc) | $I_R$ | − | 0.1 | μAdc |
| Diode Capacitance ($V_R$ = 0 V, f = 1.0 MHz) | $C_D$ | − | 3.0 | pF |
| Forward Voltage ($I_F$ = 100 mAdc) | $V_F$ | − | 1.2 | Vdc |
| Reverse Recovery Time ($I_F$ = $I_R$ = 10 mAdc) | $t_{rr}$ | − | 4.0 | ns |

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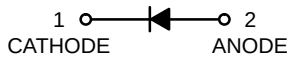




**SOD−523**
**CASE 502**
**PLASTIC**

**MARKING DIAGRAM**

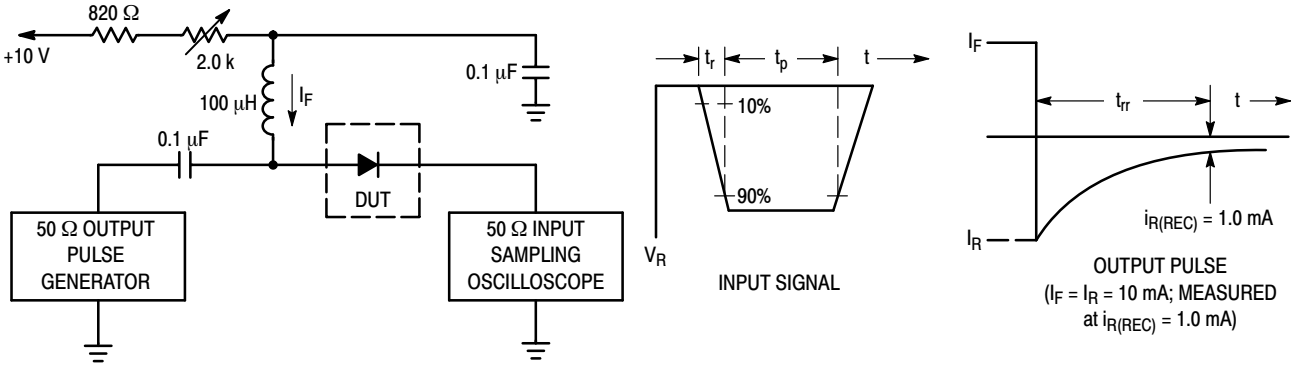

A = Device Code
M = Date Code*
▪ = Pb−Free Package
(Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

**ORDERING INFORMATION**

| Device | Package | Shipping† |
|---|---|---|
| 1SS400T1G | SOD−523 (Pb−Free) | 3000 / Tape & Reel |
| 1SS400T5G | SOD−523 (Pb−Free) | 8000 / 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.




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**

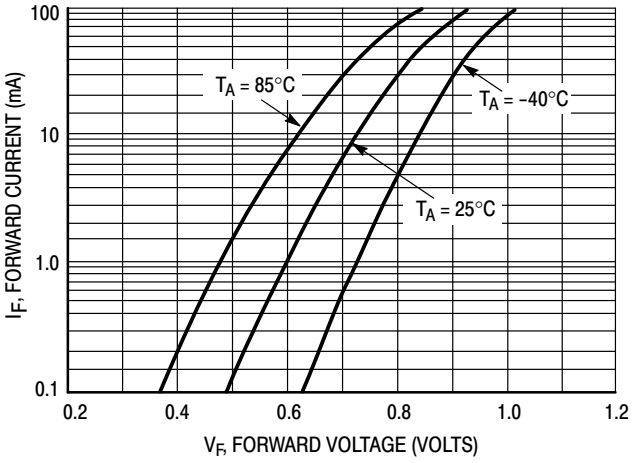



**Figure 2. Forward Voltage**

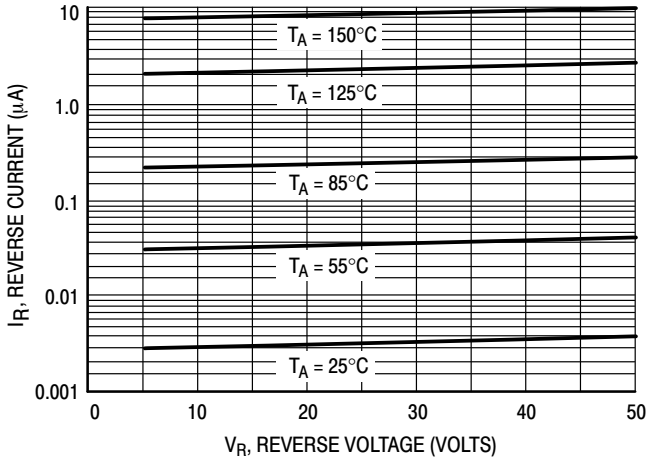



**Figure 3. Leakage Current**

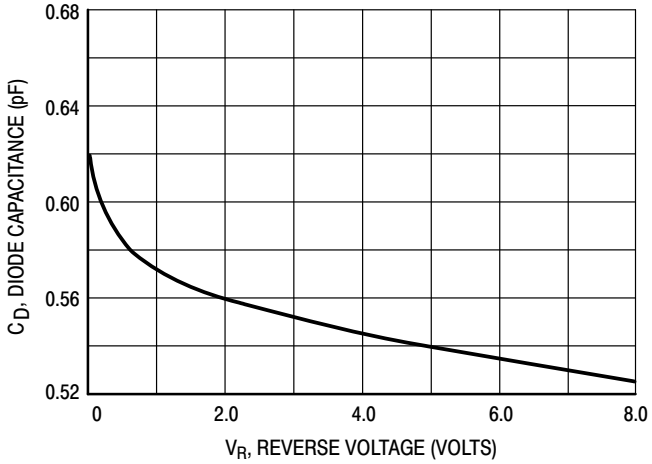
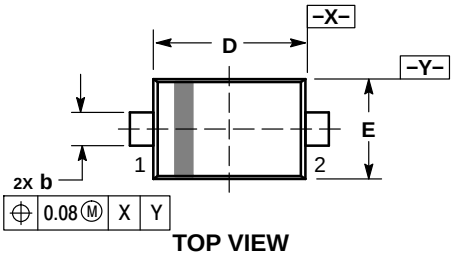


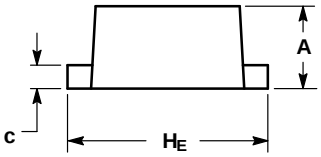

**Figure 4. Capacitance**

## PACKAGE DIMENSIONS

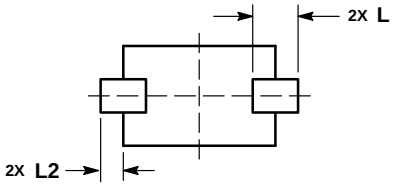
**SOD−523**
CASE 502
ISSUE E




**TOP VIEW**




**SIDE VIEW**

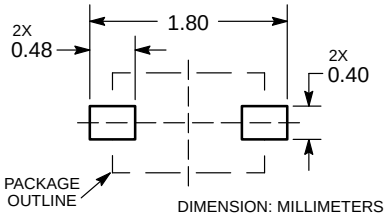



**BOTTOM VIEW**

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.

| | MILLIMETERS | | |
|---|---|---|---|
| DIM | 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.



**PUBLICATION ORDERING INFORMATION**

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**1SS400T1/D**