

NSD914XV2

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
- 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 |

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.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------------------------|---------------|-------------|
| Total Device Dissipation FR-5 Board (Note 1) T _A = 25°C Derate above 25°C | P _D | 200 1.57 | mW mW/°C |
| Thermal Resistance Junction-to-Ambient | R _{θJA} | 635 | °C/W |
| Junction and Storage Temperature Range | T _J , T _{stg} | -55 to 150 | °C |

1. FR-4 @ Minimum Pad.

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

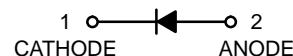
OFF CHARACTERISTICS

| | | | | |
|---|-------------------|-----|-----------|--------------|
| Reverse Breakdown Voltage (I _{BR} = 100 μAdc) | V _(BR) | 100 | - | Vdc |
| Reverse Voltage Leakage Current (V _R = 20 Vdc) (V _R = 75 Vdc) | I _R | - | 25 5.0 | nAdc μAdc |
| Diode Capacitance (V _R = 0 V, f = 1.0 MHz) | C _D | - | 4.0 | pF |
| Forward Voltage (I _F = 10 mAdc) | V _F | - | 1.0 | Vdc |
| Reverse Recovery Time (I _F = I _R = 10 mAdc) | t _{rr} | - | 4.0 | ns |

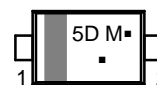


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MARKING DIAGRAM



5D = Specific Device Code
M = Date Code
▪ = Pb-Free Package

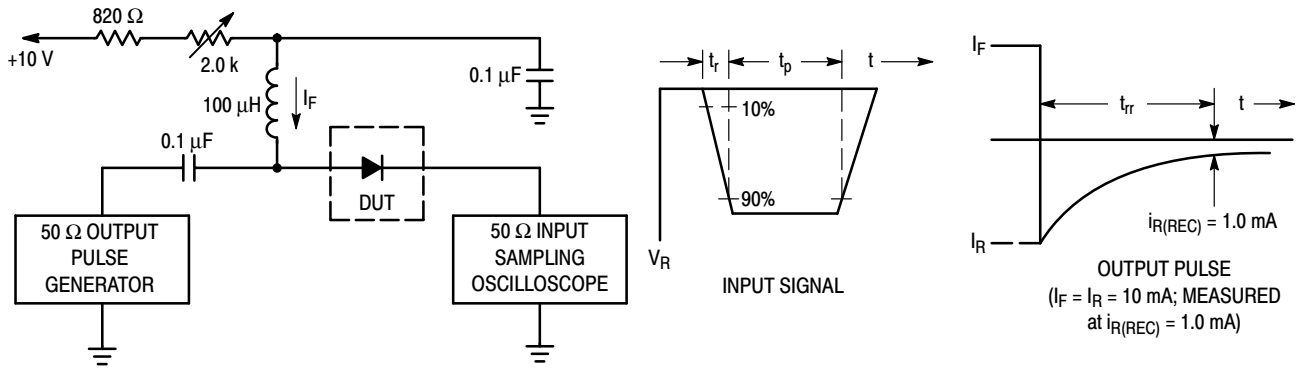
(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|--------------|-------------------|--------------------|
| NSD914XV2T1G | SOD-523 (Pb-Free) | 3000 / Tape & Reel |
| NSD914XV2T5G | SOD-523 (Pb-Free) | 8000 / 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.

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

Figure 1. Recovery Time Equivalent Test Circuit

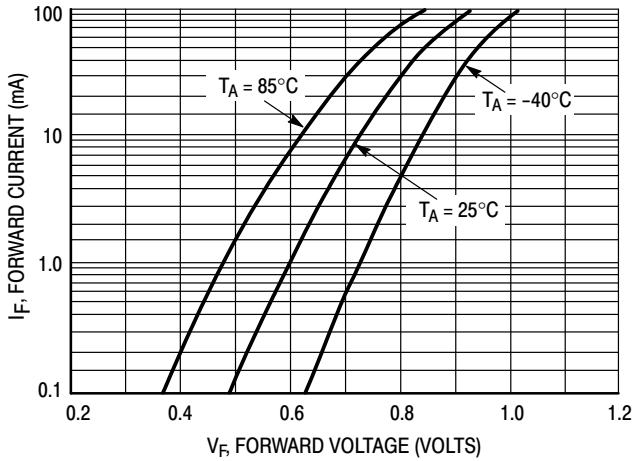


Figure 2. Forward Voltage

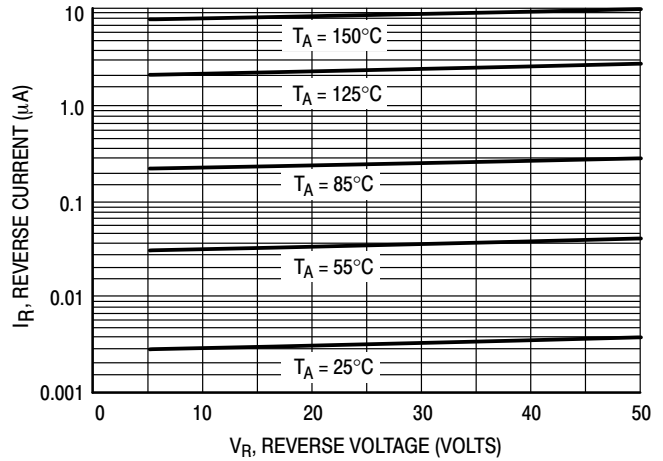


Figure 3. Leakage Current

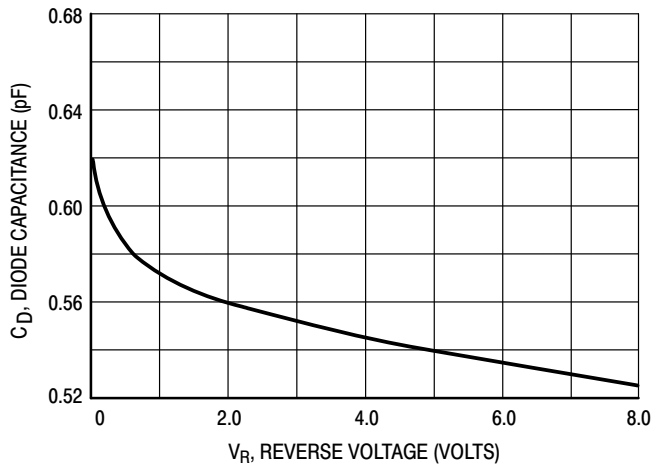
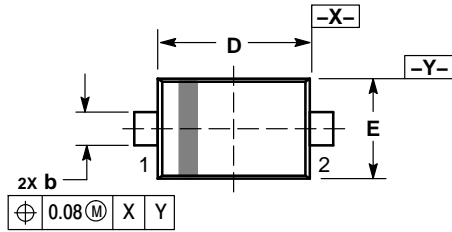


Figure 4. Capacitance

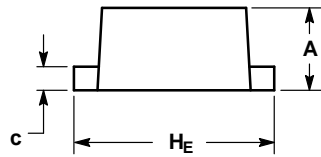
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PACKAGE DIMENSIONS

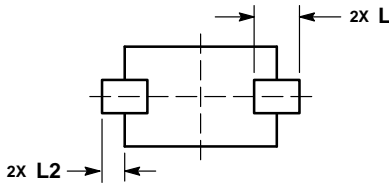
SOD-523
CASE 502
ISSUE E



TOP VIEW



SIDE VIEW



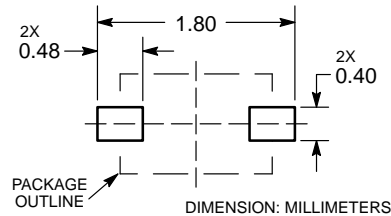
BOTTOM VIEW

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.

| 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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