

# NSD914XV2T1

Preferred Device

## 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
- Pb-Free Package is Available

### 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 | $I_{FM}(\text{surge})$ | 500 | mAdc |

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.

### THERMAL CHARACTERISTICS

| Characteristic  | Symbol          | Max         | Unit        |
|---|-----------------|-------------|-------------|
| Total Device Dissipation FR-5 Board (Note 1)<br>$T_A = 25^\circ\text{C}$<br>Derate above 25°C | $P_D$           | 200<br>1.57 | mW<br>mW/°C |
| Thermal Resistance<br>Junction-to-Ambient   | $R_{\theta JA}$ | 635         | °C/W        |
| Junction and Storage Temperature  | $T_J, T_{stg}$  | 150         | °C          |

1. FR-4 @ Minimum Pad.

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

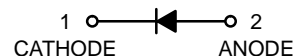
### OFF CHARACTERISTICS

|   |            |     |           |                         |
|---|------------|-----|-----------|-------------------------|
| Reverse Breakdown Voltage<br>( $I_{BR} = 100 \mu\text{Adc}$ )                               | $V_{(BR)}$ | 100 | –         | Vdc                     |
| Reverse Voltage Leakage Current<br>( $V_R = 20 \text{ Vdc}$ )<br>( $V_R = 75 \text{ Vdc}$ ) | $I_R$      | –   | 25<br>5.0 | nAdc<br>$\mu\text{Adc}$ |
| Diode Capacitance<br>( $V_R = 0 \text{ V}$ , $f = 1.0 \text{ MHz}$ )                        | $C_D$      | –   | 4.0       | pF                      |
| Forward Voltage<br>( $I_F = 10 \text{ mAdc}$ )  | $V_F$      | –   | 1.0       | Vdc                     |
| Reverse Recovery Time<br>( $I_F = I_R = 10 \text{ mAdc}$ )                                  | $t_{rr}$   | –   | 4.0       | ns                      |



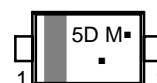
ON Semiconductor®

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SOD-523  
CASE 502  
PLASTIC

### MARKING DIAGRAM



5D = Specific Device Code

M = Date Code

▪ = Pb-Free Package

(Note: Microdot may be in either location)

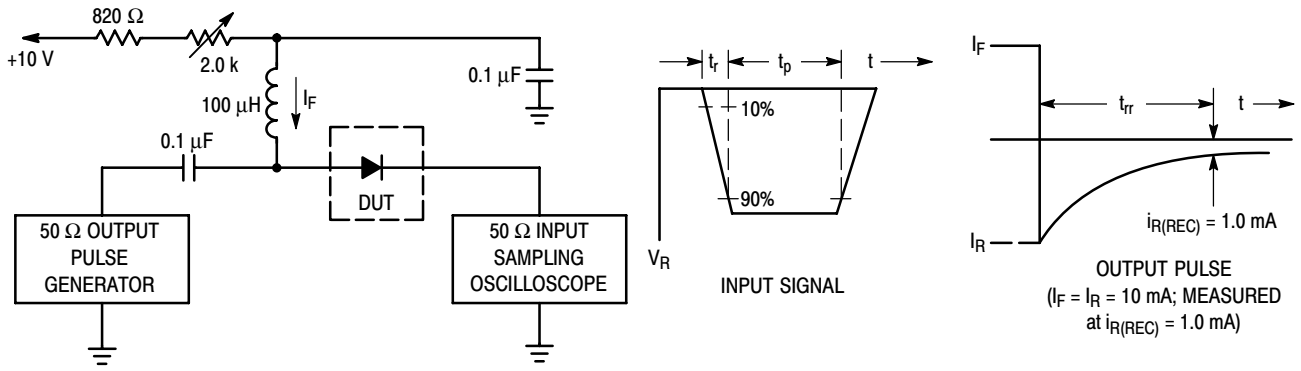
### ORDERING INFORMATION

| Device       | Package              | Shipping†        |
|--------------|----------------------|------------------|
| NSD914XV2T1  | SOD-523              | 3000/Tape & Reel |
| NSD914XV2T1G | SOD-523<br>(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.

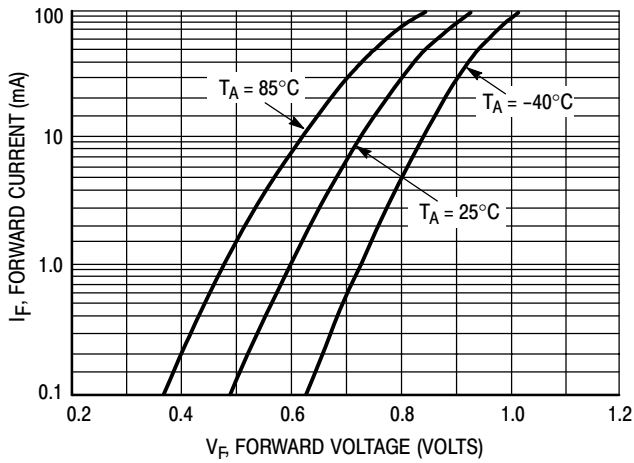
**Preferred** devices are recommended choices for future use and best overall value.

# NSD914XV2T1

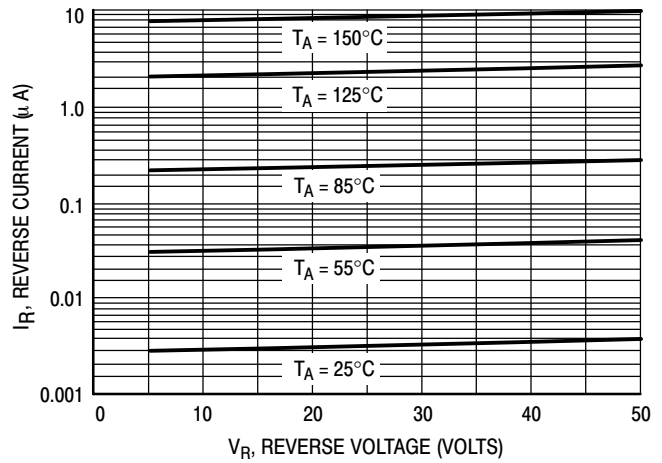


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

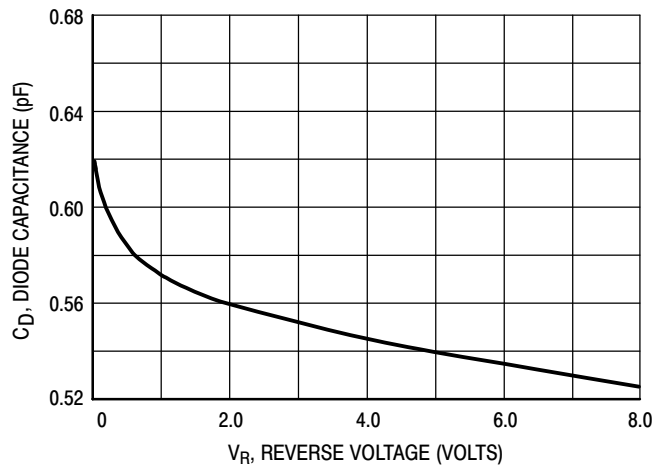
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

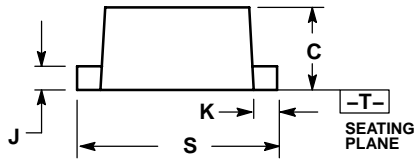
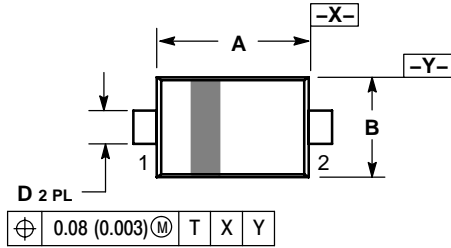


**Figure 4. Capacitance**

# NSD914XV2T1

## PACKAGE DIMENSIONS

**SOD-523**  
CASE 502-01  
ISSUE B

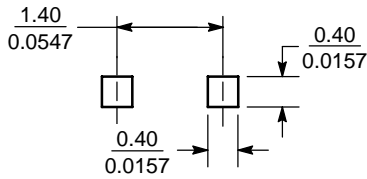


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

| DIM | MILLIMETERS |      |      | INCHES |        |        |
|-----|-------------|------|------|--------|--------|--------|
|     | MIN         | NOM  | MAX  | MIN    | NOM    | MAX    |
| A   | 1.10        | 1.20 | 1.30 | 0.043  | 0.047  | 0.051  |
| B   | 0.70        | 0.80 | 0.90 | 0.028  | 0.032  | 0.035  |
| C   | 0.50        | 0.60 | 0.70 | 0.020  | 0.024  | 0.028  |
| D   | 0.25        | 0.30 | 0.35 | 0.010  | 0.012  | 0.014  |
| J   | 0.07        | 0.14 | 0.20 | 0.0028 | 0.0055 | 0.0079 |
| K   | 0.15        | 0.20 | 0.25 | 0.006  | 0.008  | 0.010  |
| S   | 1.50        | 1.60 | 1.70 | 0.059  | 0.063  | 0.067  |

### SOLDERING FOOTPRINT\*



SCALE 10:1 (mm/inches)

\*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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