

NSD914XV2T1

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) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 200 1.57 | mW 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 |

1. FR-4 @ Minimum Pad.

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

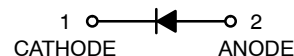
OFF CHARACTERISTICS

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



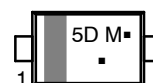
ON Semiconductor®

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SOD-523
CASE 502
PLASTIC

MARKING DIAGRAM



5D = Specific Device Code

M = Date Code

▪ = Pb-Free Package

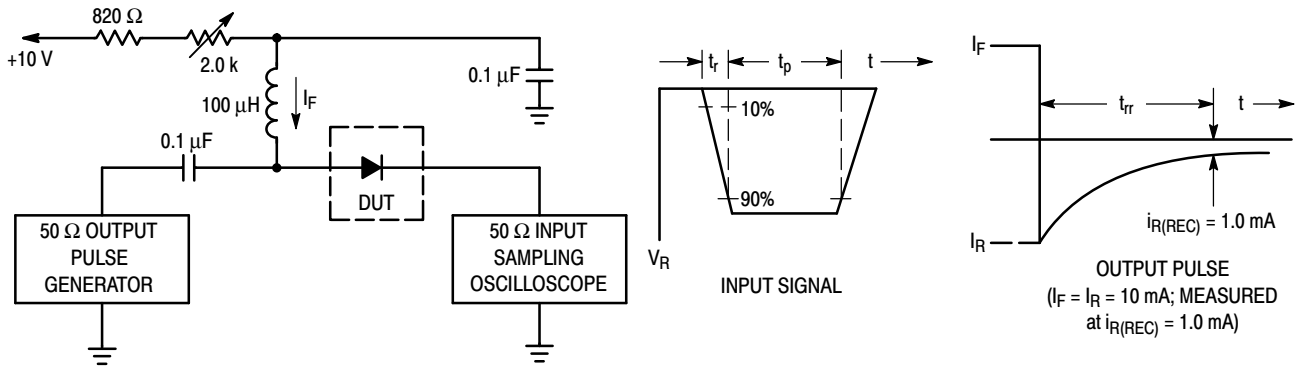
(Note: Microdot may be in either location)

ORDERING INFORMATION

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

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

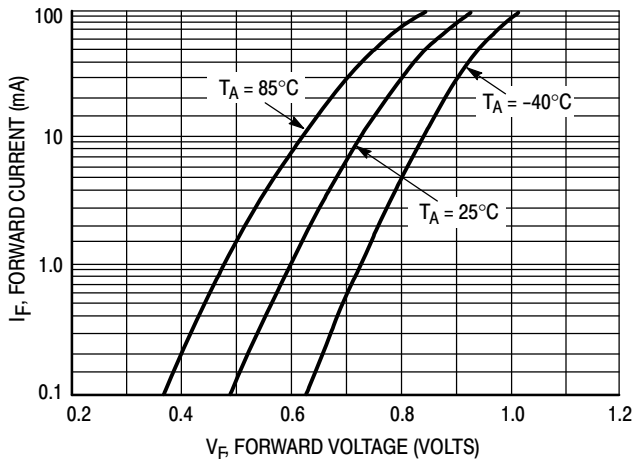


Figure 2. Forward Voltage

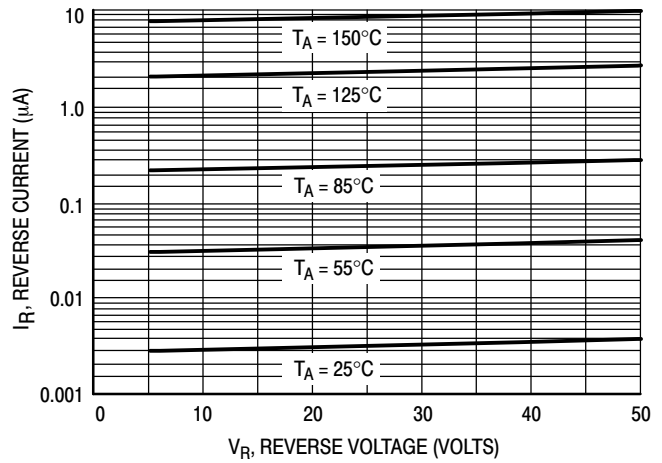


Figure 3. Leakage Current

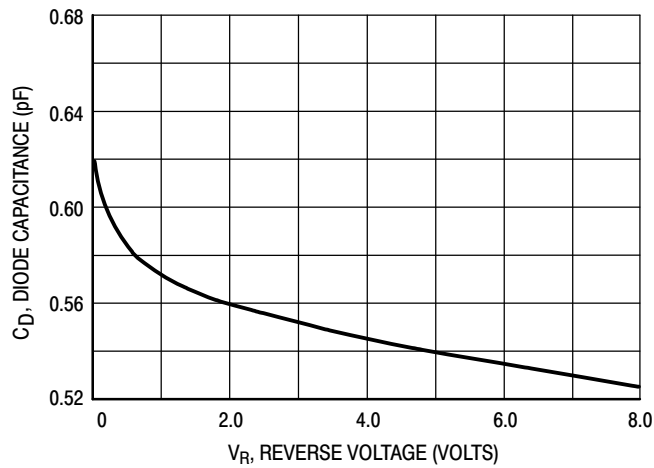
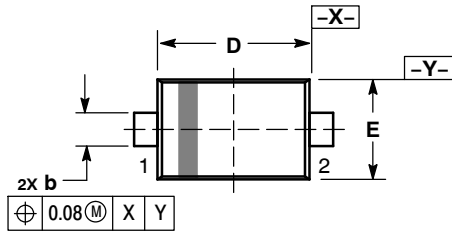


Figure 4. Capacitance

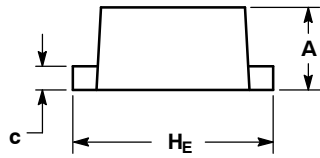
NSD914XV2T1

PACKAGE DIMENSIONS

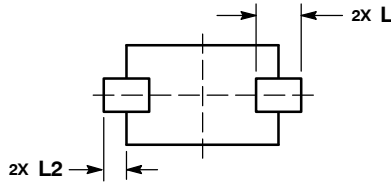
SOD-523
CASE 502
ISSUE E



TOP VIEW



SIDE VIEW



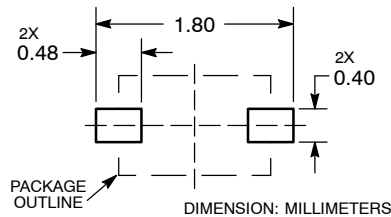
BOTTOM VIEW

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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