

NSD914F3T5G

High-Speed Switching Diode

The NSD914F3T5G device is a spin-off of our popular SOT-23 three-leaded device. It is designed for high speed switching applications and is housed in the SOT-1123 surface mount package. This device is ideal for low-power surface mount applications where board space is at a premium.

Features

- Reduces Board Space
- This is a Halide-Free Device
- This is a Pb-Free Device

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|----------------------------|-----------------|-------|------|
| Reverse Voltage | V_R | 100 | Vdc |
| Forward Current | I_F | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500 | mAdc |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|---|-----------------------------|----------------|----------------------------|
| Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D (Note 1) | 290 2.3 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ (Note 1) | 432 | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D (Note 2) | 347 2.8 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ (Note 2) | 360 | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Junction-to-Lead 3 | $R_{\psi JL}$ (Note 2) | 143 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

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. 100 mm² 1 oz, copper traces.
2. 500 mm² 1 oz, copper traces.

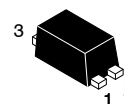


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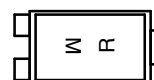


NSD914F3T5G



SOT-1123
CASE 524AA
STYLE 2

MARKING DIAGRAM



R = Device Code
M = Date Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|-------------|-----------------------|------------------|
| NSD914F3T5G | SOT-1123 (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 Specifications Brochure, BRD8011/D.

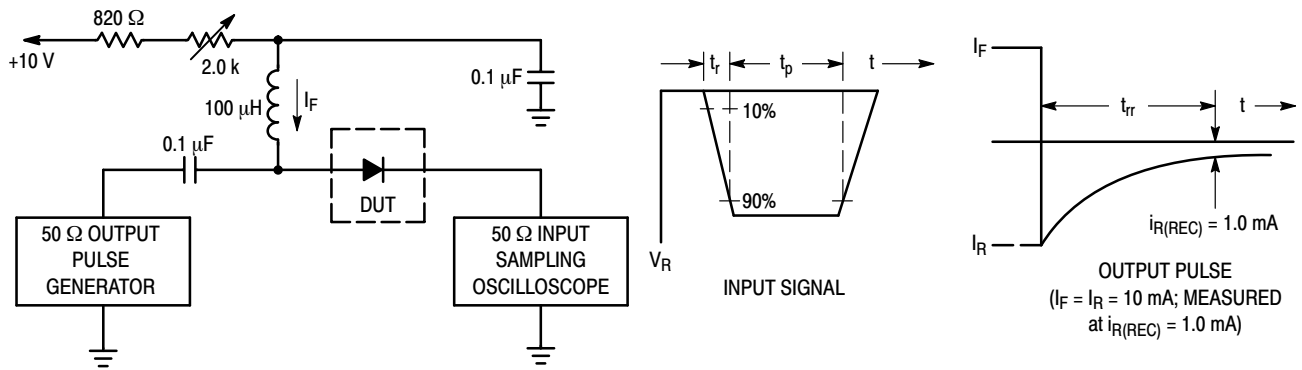
NSD914F3T5G

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|------------|--------|--------|-----------|---------------------|
| OFF CHARACTERISTICS | | | | | |
| Reverse Breakdown Voltage ($I_R = 100 \mu\text{A}$) | $V_{(BR)}$ | 100 | - | - | Vdc |
| Reverse Voltage Leakage Current ($V_R = 20 \text{ Vdc}$) ($V_R = 75 \text{ Vdc}$) | I_R | - - | - - | 25 5.0 | nA μA |
| Diode Capacitance ($V_R = 0, f = 1.0 \text{ MHz}$) | C_T | - | - | 4.0 | pF |
| Forward Voltage ($I_F = 10 \text{ mA}$) | V_F | - | - | 1.0 | Vdc |
| Reverse Recovery Time ($I_F = I_R = 10 \text{ mA}$) (Figure 1) | t_{rr} | - | - | 4.0 | ns |

- FR-5 = $1.0 \times 0.75 \times 0.062$ in.
- Alumina = $0.4 \times 0.3 \times 0.024$ in. 99.5% alumina.

NSD914F3T5G



- 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

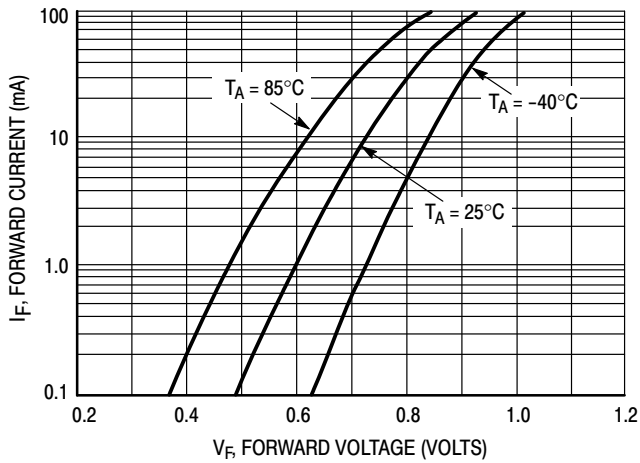


Figure 2. Forward Voltage

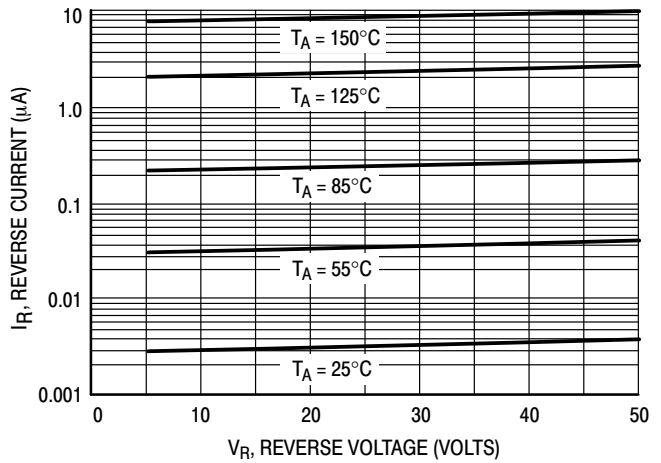


Figure 3. Leakage Current

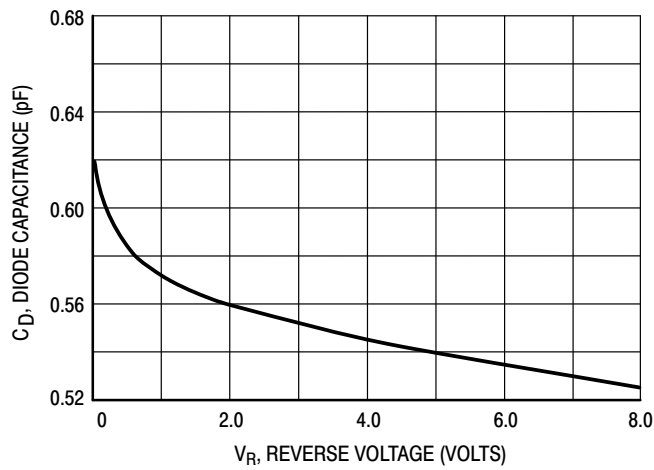
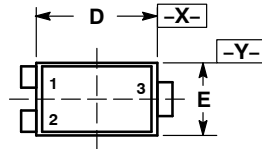


Figure 4. Capacitance

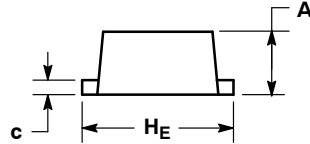
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PACKAGE DIMENSIONS

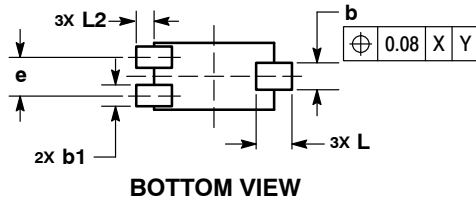
SOT-1123
CASE 524AA
ISSUE C



TOP VIEW



SIDE VIEW



BOTTOM VIEW

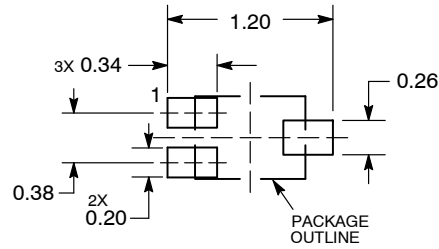
NOTES:

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 | MAX |
| A | 0.34 | 0.40 |
| b | 0.15 | 0.28 |
| b1 | 0.10 | 0.20 |
| c | 0.07 | 0.17 |
| D | 0.75 | 0.85 |
| E | 0.55 | 0.65 |
| e | 0.35 | 0.40 |
| HE | 0.95 | 1.05 |
| L | 0.185 | REF |
| L2 | 0.05 | 0.15 |

STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*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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