

# 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 $25^\circ\text{C}$	$P_D$ (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 $25^\circ\text{C}$	$P_D$ (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	$^\circ\text{C}$

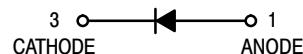
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. 100 mm<sup>2</sup> 1 oz, copper traces.
2. 500 mm<sup>2</sup> 1 oz, copper traces.

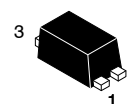


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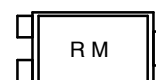


NSD914F3T5G



SOT-1123  
CASE 524AA  
STYLE 2

### MARKING DIAGRAM



R = Device Code  
M = Date Code

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
NSD914F3T5G	SOT-1123 (Pb-Free)	8000/Tape & Reel

<sup>†</sup>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.

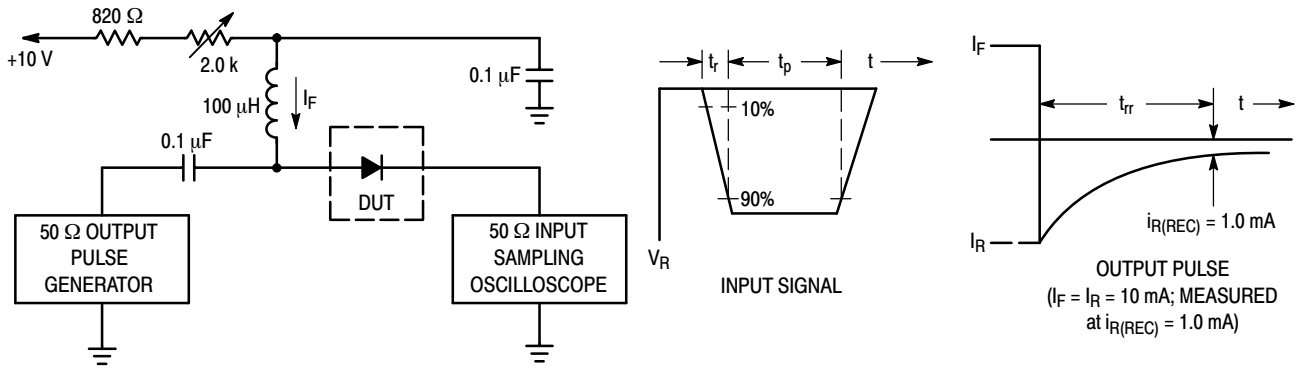
# NSD914F3T5G

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

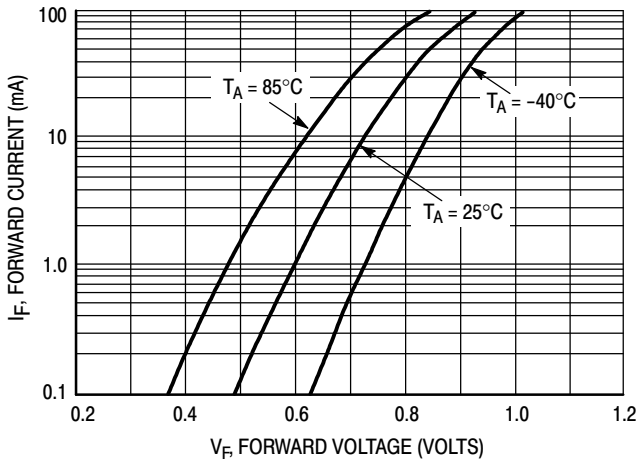
Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Reverse Breakdown Voltage ( $I_R = 100 \mu\text{A}$ )	$V_{(BR)}$	100	-	-	Vdc
Reverse Voltage Leakage Current ( $V_R = 20 \text{ Vdc}$ ) ( $V_R = 75 \text{ Vdc}$ )	$I_R$	- -	- -	25 5.0	nA $\mu\text{A}$
Diode Capacitance ( $V_R = 0, f = 1.0 \text{ MHz}$ )	$C_T$	-	-	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

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

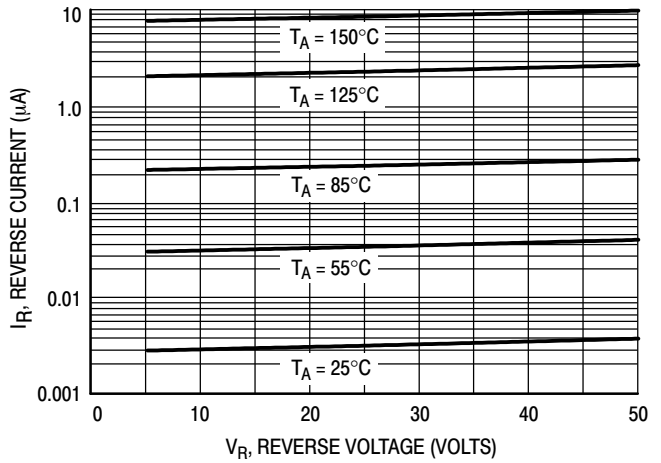
# NSD914F3T5G



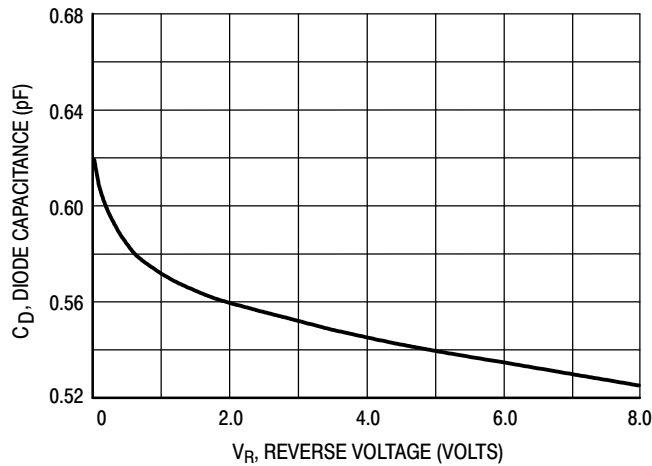
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

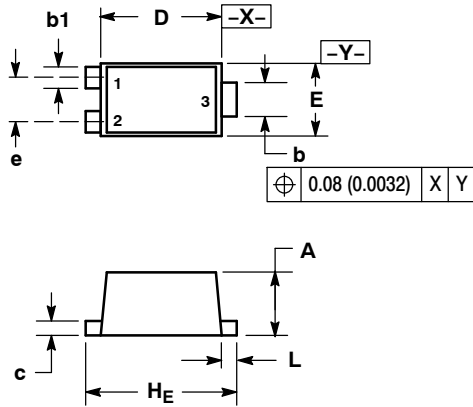


**Figure 4. Capacitance**

# NSD914F3T5G

## PACKAGE DIMENSIONS

SOT-1123  
CASE 524AA-01  
ISSUE A



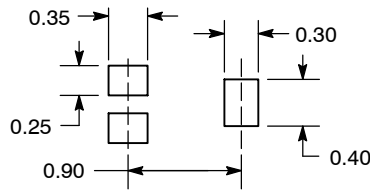
### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
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	0.34	0.37	0.40	0.013	0.015	0.016
b	0.15	0.20	0.25	0.006	0.008	0.010
b1	0.10	0.15	0.20	0.004	0.006	0.008
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
e	0.35			0.014		
HE	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

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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