

# NSD070AL

## Switching Diode

### Features

- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS

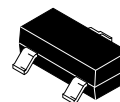
Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	70	V
Forward Current (DC)	$I_F$	200	mA
Non-Repetitive Peak Forward Current $t = 1.0$ s	$I_{FSM}$	500	mA

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.

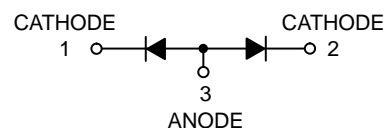


**ON Semiconductor**<sup>®</sup>

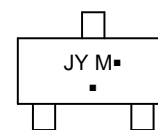
[www.onsemi.com](http://www.onsemi.com)



**CASE 318  
SOT-23**



### MARKING DIAGRAM



JY = Specific Device Code  
M = Date Code\*  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation and/or overbar may vary depending upon manufacturing location.

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
NSD070ALT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel
NSVD070ALT1G	SOT-23 (Pb-Free)	3,000 / 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.

# NSD070AL

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Thermal Resistance Junction-to-Ambient (Note 1)	$R_{\theta JA}$	-	-	556	$^{\circ}\text{C}/\text{W}$
Total Device Dissipation @ $T_A = 25^{\circ}\text{C}$	$P_D$	-	-	225	mW
Junction and Storage Temperature Range	$T_J, T_{stg}$	-	-	-65 to +150	$^{\circ}\text{C}$

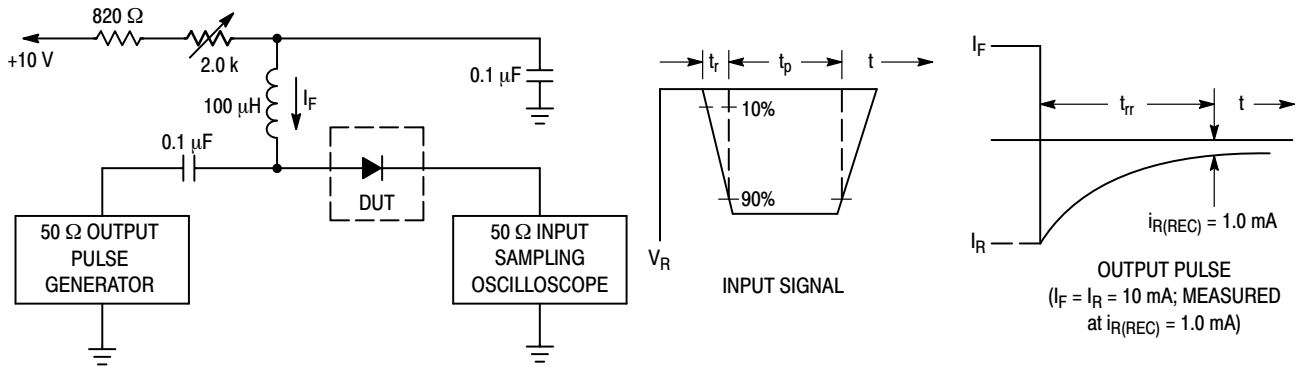
1. FR-4 =  $1.0 \times 0.75 \times 0.062$  in.

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

Characteristic	Symbol	Min	Typ	Max	Unit
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### OFF CHARACTERISTICS

Reverse Breakdown Voltage ( $V_R = 70$ Vdc)	$V_{(BR)}$	70	-	-	V
Reverse Voltage Leakage Current ( $V_R = 70$ Vdc) ( $V_R = 70$ Vdc, $T_J = 150^{\circ}\text{C}$ )	$I_R$	-	-	5.0 80	nA
Diode Capacitance ( $V_R = 0$ V, $f = 1.0$ MHz)	$C_D$	-	1.0	2.0	pF
Forward Voltage ( $I_F = 1.0$ mA) ( $I_F = 10$ mA) ( $I_F = 50$ mA) ( $I_F = 150$ mA)	$V_F$	-	-	900 1000 1100 1250	mV
Reverse Recovery Time ( $I_F = I_R = 10$ mA) (Figure 1)	$t_{rr}$	-	-	3.0	$\mu\text{s}$



- Notes: 1. A 2.0 k $\Omega$  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

# NSD070AL

## TYPICAL CHARACTERISTICS

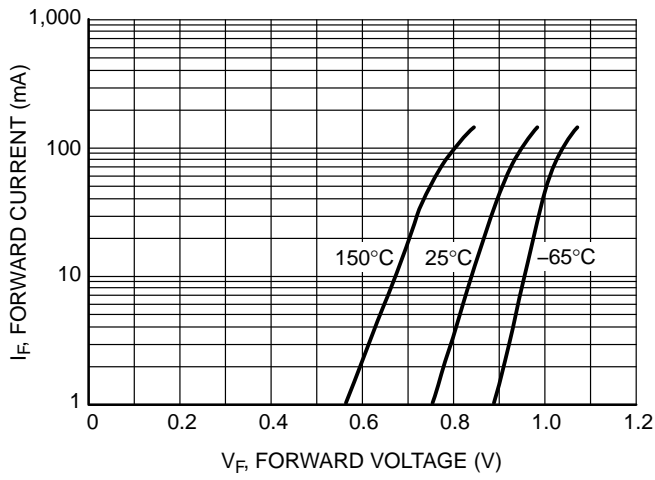


Figure 2. Forward Voltage

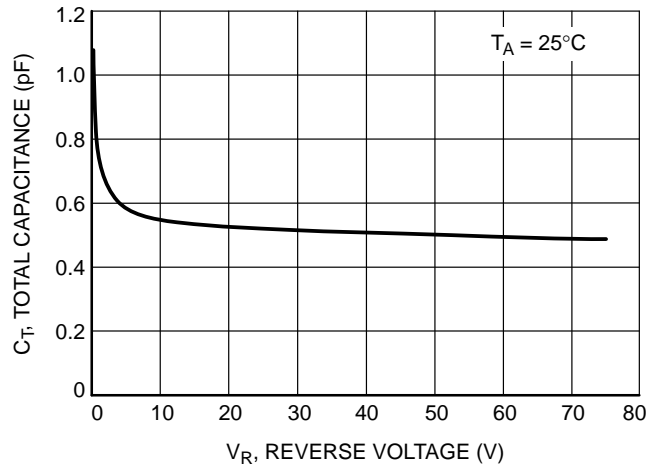
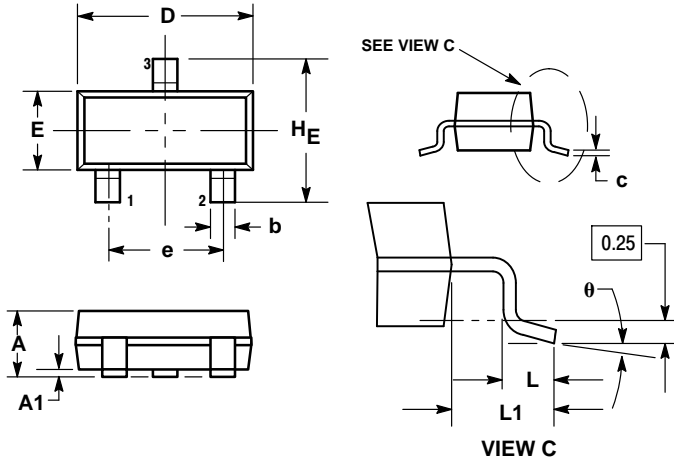


Figure 3. Capacitance

# NSD070AL

## PACKAGE DIMENSIONS

SOT-23 (TO-236)  
CASE 318-08  
ISSUE AP

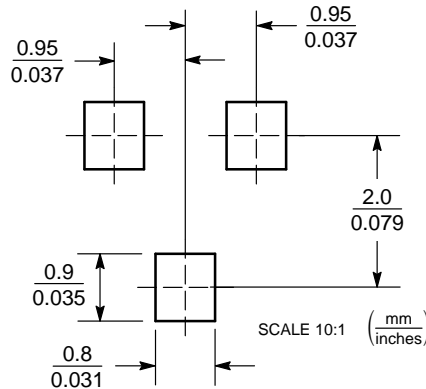



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. 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			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

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