

# Schottky Barrier Diode

## NSR10F40NXT5G

These Schottky barrier diodes are optimized for low forward voltage drop and low leakage current and are offered in a Chip Scale Package (CSP) to reduce board space. The low thermal resistance enables designers to meet the challenging task of achieving higher efficiency and meeting reduced space requirements.

### Features

- Very Low Forward Voltage Drop – 490 mV @ 1.0 A
- Low Reverse Current – 10  $\mu$ A @ 10 V VR
- 1.0 A of Continuous Forward Current
- ESD Rating – Human Body Model: Class 3B  
 – Machine Model: Class C
- Very High Switching Speed
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### Typical Applications

- LCD and Keypad Backlighting
- Camera Photo Flash
- Buck and Boost dc-dc Converters
- Reverse Voltage and Current Protection
- Clamping & Protection

### Markets

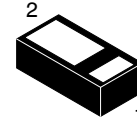
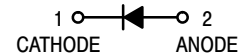
- Mobile Handsets
- MP3 Players
- Digital Camera and Camcorders
- Notebook PCs & PDAs
- GPS

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	40	V
Forward Current (DC)	$I_F$	1.0	A
Forward Surge Current (60 Hz @ 1 cycle)	$I_{FSM}$	18	A
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	$I_{FRM}$	4.0	A
ESD Rating:	Human Body Model Machine Model	ESD > 8 > 400	kV V

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.

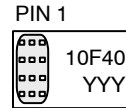
## 40 V SCHOTTKY BARRIER DIODE



DSN2  
(0502)  
CASE 152AD

10F40 = Specific Device Code  
 YYY = Year Code

### MARKING DIAGRAM



### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
NSR10F40NXT5G	DSN2 (Pb-Free)	5000 / 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.

# NSR10F40NXT5G

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Thermal Resistance Junction-to-Ambient (Note 1) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ $P_D$			228 548	$^\circ\text{C}/\text{W}$ mW
Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ $P_D$			85 1.47	$^\circ\text{C}/\text{W}$ W
Storage Temperature Range	$T_{stg}$			-40 to +125	$^\circ\text{C}$
Junction Operating Temperature Range	$T_J$			-40 to +150	$^\circ\text{C}$

1. Mounted onto a 4 in square FR-4 board 50 mm sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.
2. Mounted onto a 4 in square FR-4 board 1 in sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage ( $V_R = 10\text{ V}$ ) ( $V_R = 40\text{ V}$ )	$I_R$			10 100	$\mu\text{A}$
Forward Voltage ( $I_F = 0.5\text{ A}$ ) ( $I_F = 1.0\text{ A}$ )	$V_F$			0.42 0.49	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

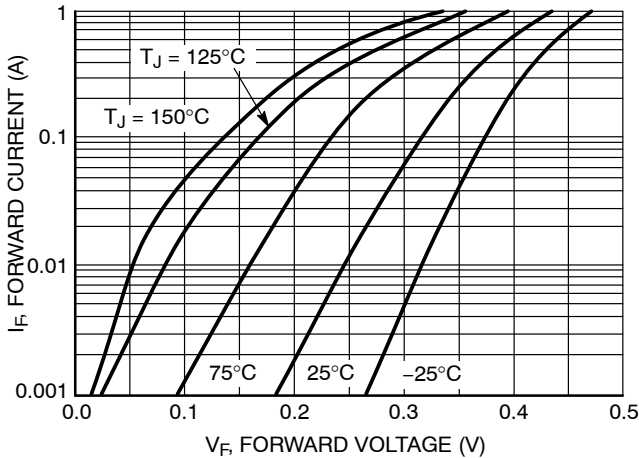


Figure 1. Forward Voltage

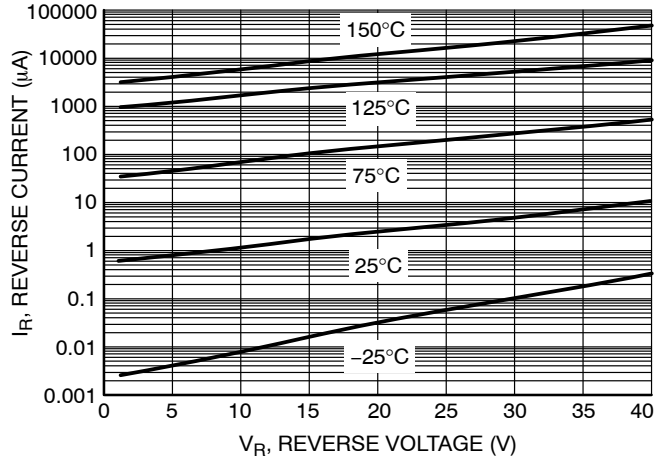


Figure 2. Typical Reverse Current

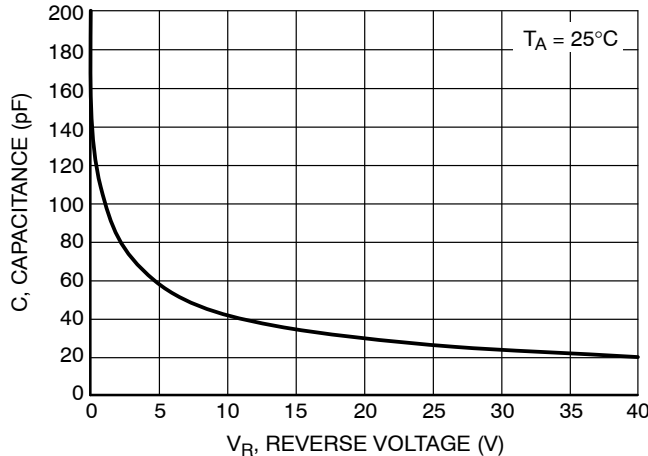
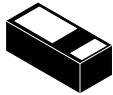


Figure 3. Typical Capacitance

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

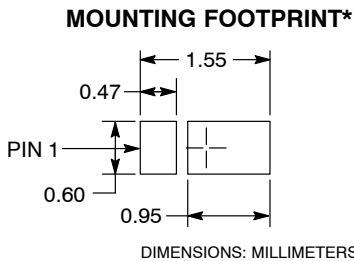
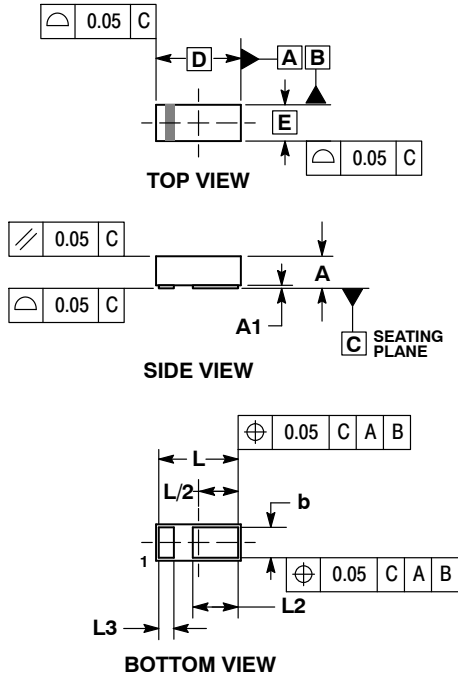
ON Semiconductor®



SCALE 8:1

**DSN2, 1.4x0.6, 0.75P**  
CASE 152AD  
ISSUE C

DATE 24 APR 2017



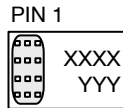
See Application Note AND8464/D for more mounting details

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

- NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
  2. CONTROLLING DIMENSION: MILLIMETERS.

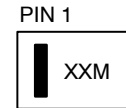
MILLIMETERS		
DIM	MIN	MAX
A	0.25	0.31
A1	---	0.05
b	0.45	0.55
D	1.40 BSC	
E	0.60 BSC	
L	1.20	1.30
L2	0.70	0.80
L3	0.20	0.30

### GENERIC MARKING DIAGRAM1\*



XXXX = Specific Device Code  
YYY = Year Code

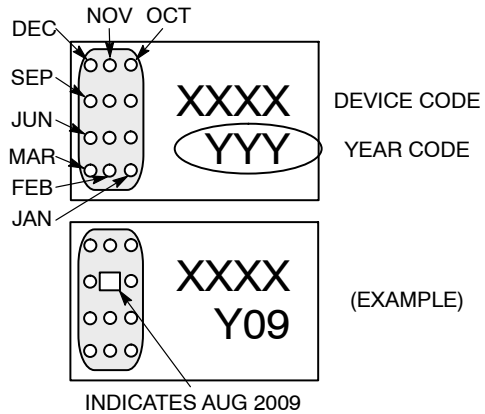
### GENERIC MARKING DIAGRAM2\*



XX = Specific Device Code  
M = Date Code

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G", may or not be present. Some products may not follow the Generic Marking.

### CATHODE BAND MONTH CODING



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