

NSR10F40NXT5G

Schottky Barrier Diode

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 μ 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

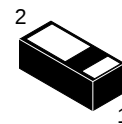
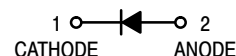
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.



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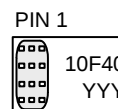
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40 V SCHOTTKY BARRIER DIODE



DSN2
(0502)
CASE 152AD

MARKING DIAGRAM



10F40 = Specific Device Code
YYY = Year Code

ORDERING INFORMATION

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

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	$^\circ\text{C/W}$ 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	$^\circ\text{C/W}$ 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	μA
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.

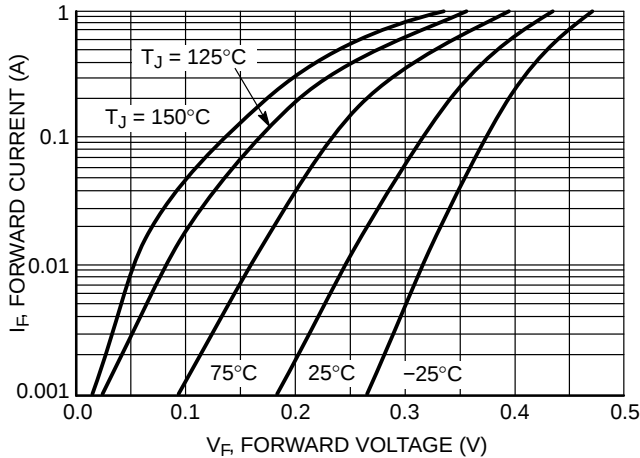


Figure 1. Forward Voltage

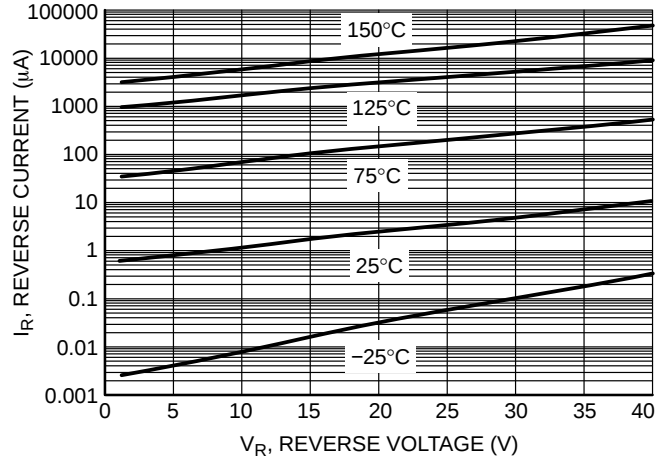


Figure 2. Typical Reverse Current

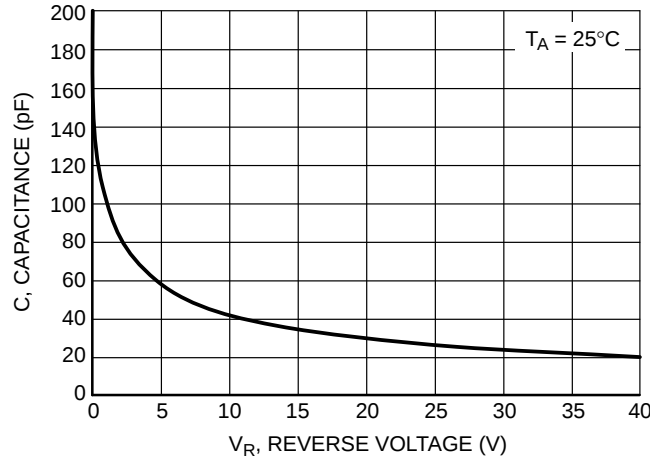


Figure 3. Typical Capacitance

PACKAGE DIMENSIONS

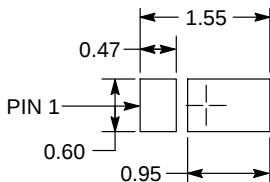
NOTES:

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

The diagram illustrates a date stamp format. It consists of two main rectangular boxes. The top box contains a vertical column of eight circles on the left, each with an arrow pointing to a month abbreviation: DEC, NOV, OCT, SEP, JUN, MAR, FEB, and JAN. To the right of this column are the characters 'XXXX' and 'YYY'. 'XXXX' is labeled 'DEVICE CODE' and 'YYY' is labeled 'YEAR CODE' and circled. The bottom box contains a vertical column of eight circles on the left, with the eighth circle (corresponding to JAN) replaced by a square. An arrow points from the text 'INDICATES AUG 2009' to this square. To the right of this box are the characters 'XXXX' and 'Y09', with '(EXAMPLE)' written below them. An asterisk (*) is located to the left of the bottom box.

INDICATES AUG 2009



DIMENSIONS: MILLIMETERS

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.

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