

NSR05F20NXT5G

Schottky Barrier Diode, 20 V

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

- Low Forward Voltage Drop – 390 mV @ 500 mA
- Low Reverse Current – 15 μ A @ 10 V VR
- 500 mA of Continuous Forward Current
- ESD Rating – Human Body Model: Class 3B
– Machine Model: Class C
- 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 | 20 | V |
| Forward Current (DC) | I_F | 500 | mA |
| Forward Surge Current (60 Hz @ 1 cycle) | I_{FSM} | 10 | 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 |

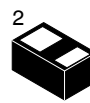
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



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20 V SCHOTTKY BARRIER DIODE



**DSN2
(0402)
CASE 152AC**

MARKING DIAGRAM

PIN 1



05F20 = Specific Device Code
YYY = Year Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|---------------|-------------------|--------------------|
| NSR05F20NXT5G | 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.

NSR05F20NXT5G

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 | | | 240 521 | $^\circ\text{C}/\text{W}$ mW |
| Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$ | $R_{\theta JA}$ P_D | | | 94 1.3 | $^\circ\text{C}/\text{W}$ W |
| Storage Temperature Range | T_{stg} | | | -40 to +125 | $^\circ\text{C}$ |
| Junction Temperature | T_J | | | +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 ($V_R = 10\text{ V}$) ($V_R = 20\text{ V}$) | I_R | | | 15 75 | μA |
| Forward Voltage ($I_F = 100\text{ mA}$) ($I_F = 500\text{ mA}$) | V_F | | 0.330 0.390 | 0.345 0.430 | V |

NSR05F20NXT5G

TYPICAL CHARACTERISTICS

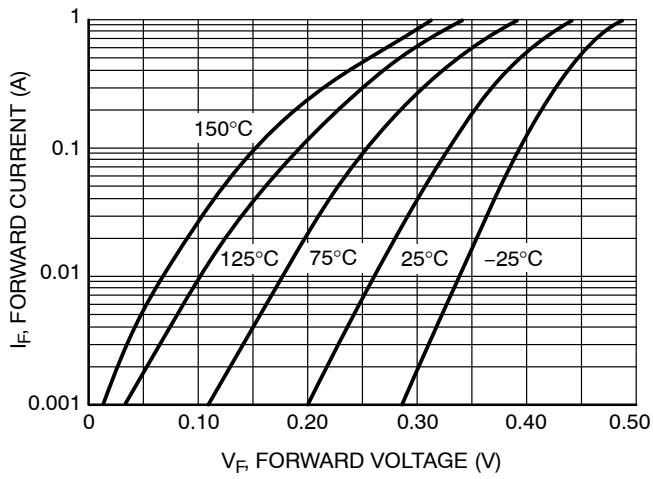


Figure 1. Forward Voltage

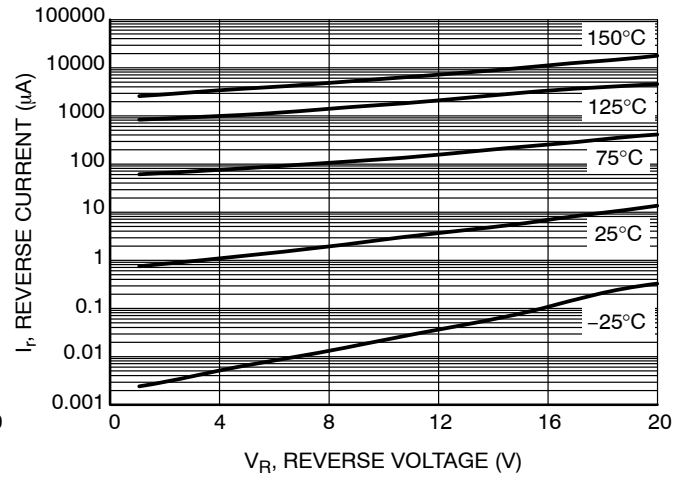


Figure 2. Leakage Current

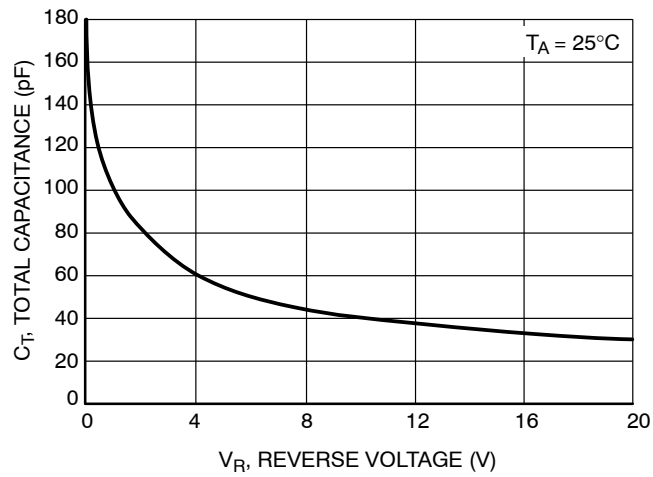


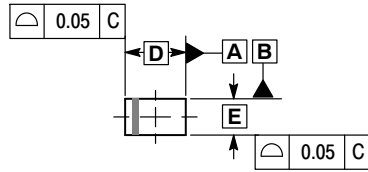
Figure 3. Total Capacitance



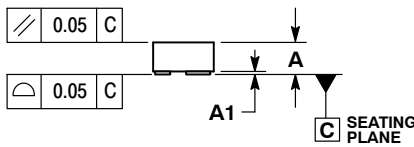
SCALE 8:1

DSN2, 1.0x0.6, 0.575P, (0402)
 CASE 152AC
 ISSUE D

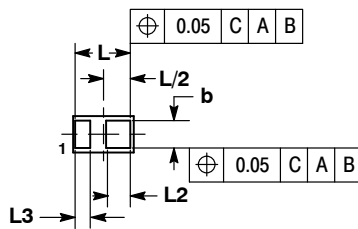
DATE 27 APR 2017



TOP VIEW

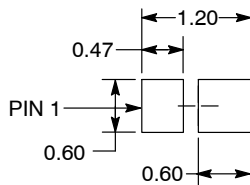


SIDE VIEW



BOTTOM VIEW

**RECOMMENDED
 SOLDER FOOTPRINT***



DIMENSIONS: MILLIMETERS

See Application Note AND8464/D for more mounting details

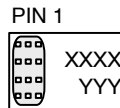
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

NOTES:

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

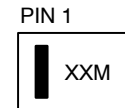
| DIM | MILLIMETERS | |
|-----|-------------|------|
| | MIN | MAX |
| A | 0.25 | 0.31 |
| A1 | --- | 0.05 |
| b | 0.45 | 0.55 |
| D | 1.00 BSC | |
| E | 0.60 BSC | |
| L | 0.85 | 0.95 |
| L2 | 0.35 | 0.45 |
| L3 | 0.20 | 0.30 |

**GENERIC
 MARKING DIAGRAM1***



XXXX = Specific Device Code
 YYY = Year Code

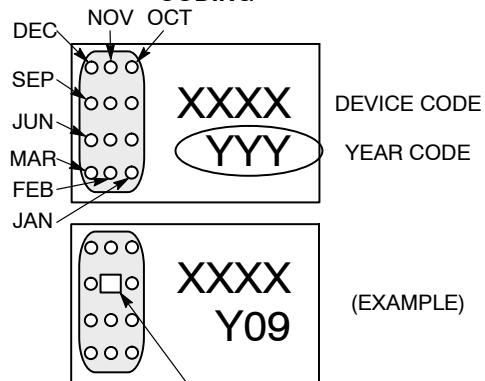
**GENERIC
 MARKING DIAGRAM2***



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**



INDICATES AUG 2009

| | | |
|-------------------------|--------------------------------------|--|
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| DESCRIPTION: | DSN2, 1.0X0.6, 0.575P, (0402) | PAGE 1 OF 1 |

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