

NSR02L30NXT5G

Schottky Barrier Diode

These Schottky barrier diodes are optimized for low forward voltage drop and low leakage current. The DSN2 (Dual Silicon No-lead) package is a chip level package using solderable metal contacts under the package similar to DFN style packages. The DSN2 style package enables 100% utilization of the package area for active silicon, offering a significant performance per board area advantage compared to products in plastic molded packages. 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 – 400 mV @ 10 mA
- Low Reverse Current – 0.20 μ A @ 10 V VR
- 200 mA of Continuous Forward Current
- Power Dissipation of 312 mW with Minimum Trace
- ESD Rating – Human Body Model: Class 3B
– Machine Model: Class C
- Very High Switching Speed
- Low Capacitance – CT = 7 pF
- This is a Halide-Free Device
- This is a Pb-Free Device

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 | 30 | V | |
| Forward Current (DC) | I_F | 200 | mA | |
| Forward Surge Current (60 Hz @ 1 cycle) | I_{FSM} | 4.0 | A | |
| ESD Rating: | Human Body Model Machine Model | ESD | >8.0 >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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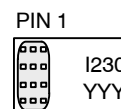
<http://onsemi.com>

30 V SCHOTTKY BARRIER DIODE



DSN2
(0201)
CASE 152AA

MARKING DIAGRAM



I230 = Specific Device Code
YYY = Year Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|---------------|-------------------|--------------------|
| NSR02L30NXT5G | 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.

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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 | | | 400 312 | $^\circ\text{C}/\text{W}$ mW |
| Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$ | $R_{\theta JA}$ P_D | | | 170 735 | $^\circ\text{C}/\text{W}$ mW |
| 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 10 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 ($V_R = 10\text{ V}$) ($V_R = 30\text{ V}$) | I_R | | | 0.2 3.0 | μA |
| Forward Voltage ($I_F = 10\text{ mA}$) ($I_F = 200\text{ mA}$) | V_F | | | 0.40 0.58 | V |
| Total Capacitance ($V_R = 5.0\text{ V}$, $f = 1\text{ MHz}$) | CT | | 7.0 | | pF |

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TYPICAL CHARACTERISTICS

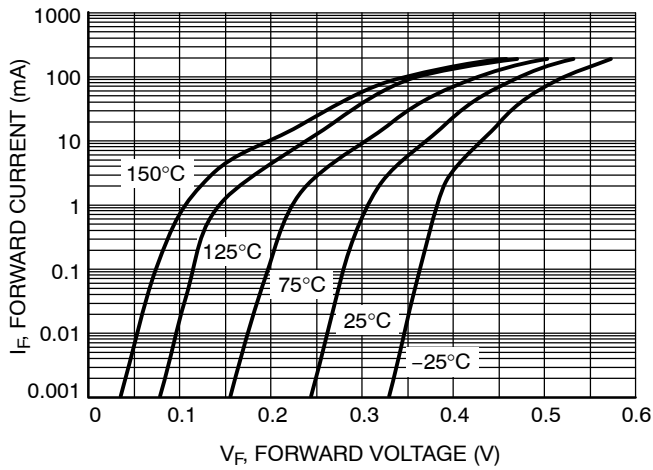


Figure 1. Forward Voltage

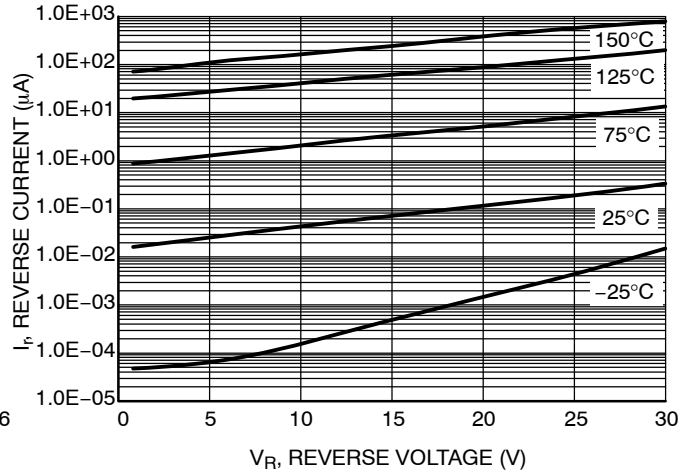


Figure 2. Leakage Current

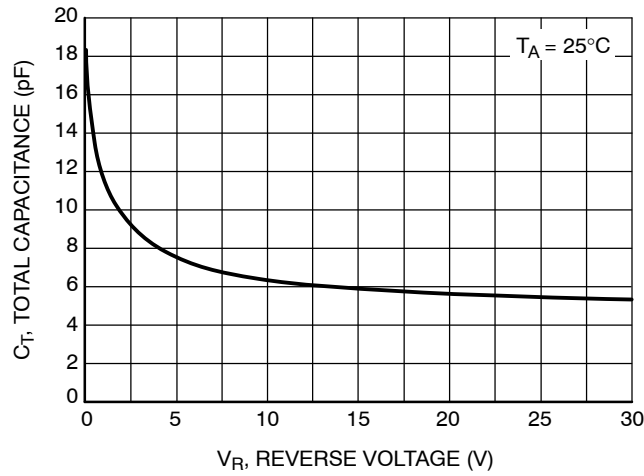
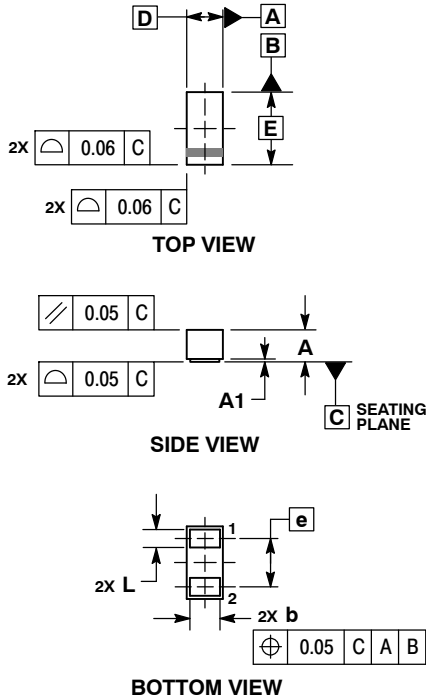


Figure 3. Total Capacitance

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PACKAGE DIMENSIONS

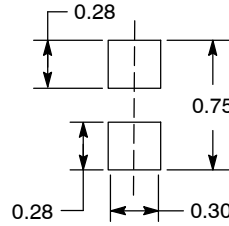
DSN2, 0.6x0.3, 0.4P, (0201)
CASE 152AA-01
ISSUE O



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

| DIM | MILLIMETERS | |
|-----|-------------|------|
| | MIN | MAX |
| A | 0.24 | 0.30 |
| A1 | 0.00 | 0.01 |
| b | 0.22 | 0.28 |
| D | 0.30 BSC | |
| E | 0.60 BSC | |
| e | 0.40 BSC | |
| L | 0.12 | 0.18 |

MOUNTING FOOTPRINT*



See Application Note AND8398/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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