

# NSR0320MW2T1

## Schottky Barrier Diodes

These Schottky barrier diodes are designed for high current, handling capability, and low forward voltage performance.

### Features

- Low Forward Voltage - 0.24 Volts (Typ) @  $I_F = 10$  mAdc
- High Current Capability
- ESD Rating - Human Body Model: CLASS 3B  
- Machine Model: C
- Pb-Free Packages are Available

### MAXIMUM RATINGS ( $T_J = 125^\circ\text{C}$ unless otherwise noted)

| Rating                                                                                     | Symbol    | Value       | Unit                       |
|--------------------------------------------------------------------------------------------|-----------|-------------|----------------------------|
| Reverse Voltage                                                                            | $V_R$     | 20          | Vdc                        |
| Peak Reverse Voltage                                                                       | $V_{RM}$  | 23          | V                          |
| Forward Power Dissipation<br>@ $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_F$     | 200<br>2.0  | mW<br>mW/ $^\circ\text{C}$ |
| Forward Current (DC)<br>Continuous                                                         | $I_F$     | 1           | A                          |
| Forward Current<br>$t = 8.3$ ms Half Sinewave                                              | $I_F$     | 5           | A                          |
| Junction Temperature Range                                                                 | $T_J$     | -55 to +125 | $^\circ\text{C}$           |
| Storage Temperature Range                                                                  | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$           |

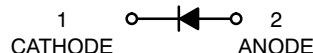
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



**ON Semiconductor®**

<http://onsemi.com>

## HIGH CURRENT SCHOTTKY BARRIER DIODE



### MARKING DIAGRAM



RD = Specific Device Code

M = Date Code

■ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device        | Package              | Shipping†          |
|---------------|----------------------|--------------------|
| NSR0320MW2T1  | SOD-323              | 3000/Tape & Reel   |
| NSR0320MW2T1G | SOD-323<br>(Pb-Free) | 3000/Tape & Reel   |
| NSR0320MW2T3G | SOD-323<br>(Pb-Free) | 10,000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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

| Characteristic                                                    | Symbol | Min | Typ  | Max  | Unit          |
|-------------------------------------------------------------------|--------|-----|------|------|---------------|
| Total Capacitance ( $V_R = 5.0\text{ V}$ , $f = 1.0\text{ MHz}$ ) | $C_T$  | -   | 25   | 29   | pF            |
| Reverse Leakage ( $V_R = 15\text{ V}$ )                           | $I_R$  | -   | 10   | 50   | $\mu\text{A}$ |
| Reverse Leakage ( $V_R = 2.0\text{ V @ } 85^\circ\text{C}$ )      | $I_R$  | -   | 200  | 300  | $\mu\text{A}$ |
| Reverse Leakage ( $V_R = 15.0\text{ V @ } 85^\circ\text{C}$ )     | $I_R$  | -   | 450  | 1000 | $\mu\text{A}$ |
| Forward Voltage ( $I_F = 10\text{ mA}$ )                          | $V_F$  | -   | 0.24 | 0.27 | V             |
| Forward Voltage ( $I_F = 100\text{ mA}$ )                         | $V_F$  | -   | 0.30 | 0.35 | V             |
| Forward Voltage ( $I_F = 900\text{ mA}$ )                         | $V_F$  | -   | 0.45 | 0.50 | V             |

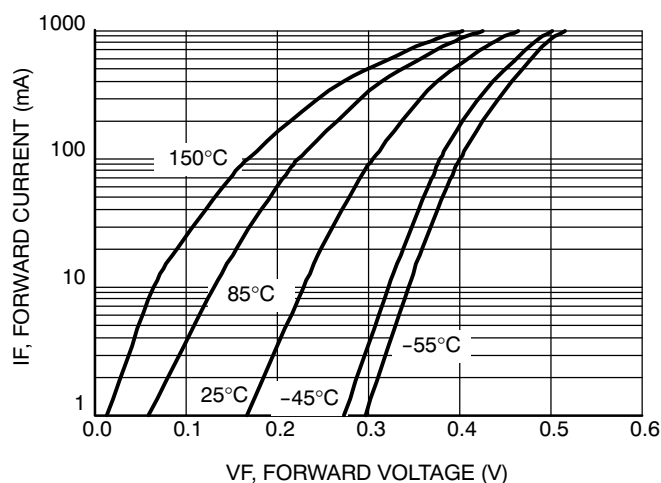


Figure 1. Forward Voltage

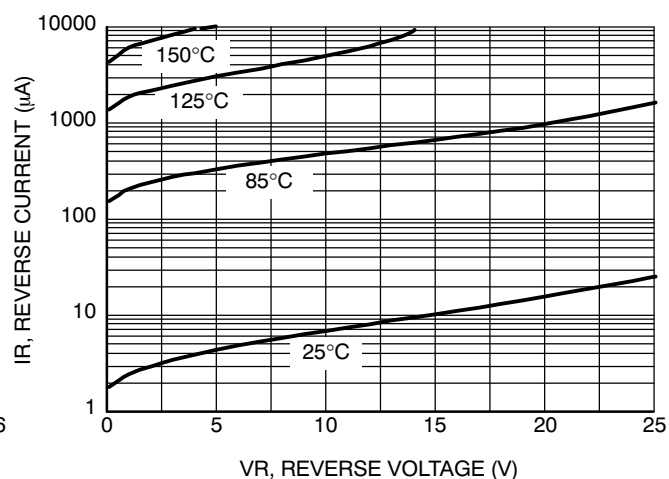


Figure 2. Leakage Current

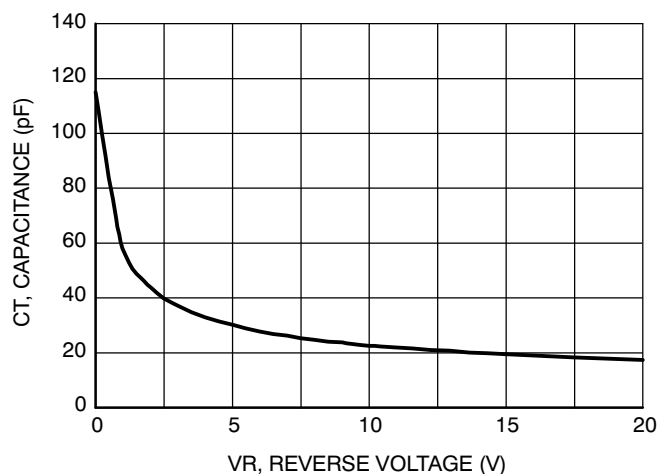
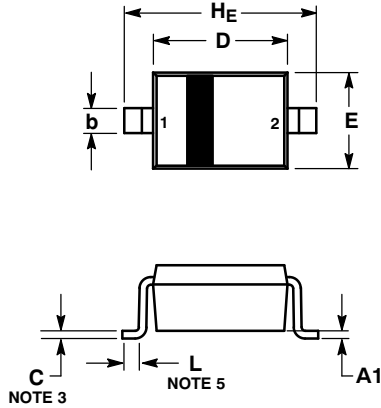


Figure 3. Total Capacitance

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## PACKAGE DIMENSIONS

**SOD-323**  
CASE 477-02  
ISSUE H



### NOTES:

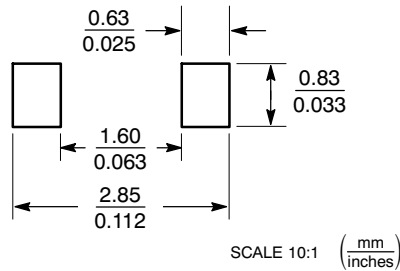
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

| DIM | MILLIMETERS |      |       | INCHES    |       |       |
|-----|-------------|------|-------|-----------|-------|-------|
|     | MIN         | NOM  | MAX   | MIN       | NOM   | MAX   |
| A   | 0.80        | 0.90 | 1.00  | 0.031     | 0.035 | 0.040 |
| A1  | 0.00        | 0.05 | 0.10  | 0.000     | 0.002 | 0.004 |
| A3  | 0.15 REF    |      |       | 0.006 REF |       |       |
| b   | 0.25        | 0.32 | 0.4   | 0.010     | 0.012 | 0.016 |
| C   | 0.089       | 0.12 | 0.177 | 0.003     | 0.005 | 0.007 |
| D   | 1.60        | 1.70 | 1.80  | 0.062     | 0.066 | 0.070 |
| E   | 1.15        | 1.25 | 1.35  | 0.045     | 0.049 | 0.053 |
| L   | 0.08        |      |       | 0.003     |       |       |
| HE  | 2.30        | 2.50 | 2.70  | 0.090     | 0.098 | 0.105 |

### STYLE 1:

1. CATHODE
2. ANODE

## SOLDERING FOOTPRINT\*



\*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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