

# NSR0320XV6

## Schottky Barrier Diode

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

### Features

- Low Forward Voltage – 0.35 V (Typ) @  $I_F = 10$  mAdc
- High Current Capability
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These are Pb-Free Devices

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

| Rating                                                                                  | Symbol    | Value       | Unit                       |
|-----------------------------------------------------------------------------------------|-----------|-------------|----------------------------|
| Reverse Voltage                                                                         | $V_R$     | 23          | V                          |
| Forward Power Dissipation @ $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_F$     | 200<br>2.0  | mW<br>mW/ $^\circ\text{C}$ |
| Forward Current (DC) – Continuous                                                       | $I_F$     | 1           | A                          |
| Forward Current<br>$t = 8.3$ ms Half Sinewave; JEDEC Method                             | $I_F$     | 7.5         | A                          |
| Junction Temperature                                                                    | $T_J$     | 125 Max     | $^\circ\text{C}$           |
| Storage Temperature Range                                                               | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$           |

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.

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

| Characteristic                                       | Symbol | Min | Typ  | Max  | Unit            |
|------------------------------------------------------|--------|-----|------|------|-----------------|
| Total Capacitance<br>( $V_R = 5.0$ V, $f = 1.0$ MHz) | $C_T$  | –   | 30   | 35   | pF              |
| Reverse Leakage<br>( $V_R = 15$ V)                   | $I_R$  | –   | 10   | 50   | $\mu\text{Adc}$ |
| Forward Voltage<br>( $I_F = 10$ mAdc)                | $V_F$  | –   | 0.24 | 0.27 | Vdc             |
| Forward Voltage<br>( $I_F = 100$ mAdc)               | $V_F$  | –   | 0.30 | 0.35 | Vdc             |
| Forward Voltage<br>( $I_F = 900$ mAdc)               | $V_F$  | –   | 0.45 | 0.50 | Vdc             |

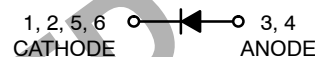
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



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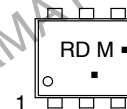
<http://onsemi.com>

## HIGH CURRENT SCHOTTKY BARRIER DIODE



SOT-563  
CASE 463A  
STYLE 5

### MARKING DIAGRAM



RD = Specific Device Code  
M = Month Code  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device         | Package              | Shipping†          |
|----------------|----------------------|--------------------|
| NSR0320XV6T1G  | SOT-563<br>(Pb-Free) | 4000 / Tape & Reel |
| NSVR0320XV6T1G | SOT-563<br>(Pb-Free) | 4000 / Tape & Reel |
| NSR0320XV6T5G  | SOT-563<br>(Pb-Free) | 8000 / 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.

TYPICAL ELECTRICAL CHARACTERISTICS

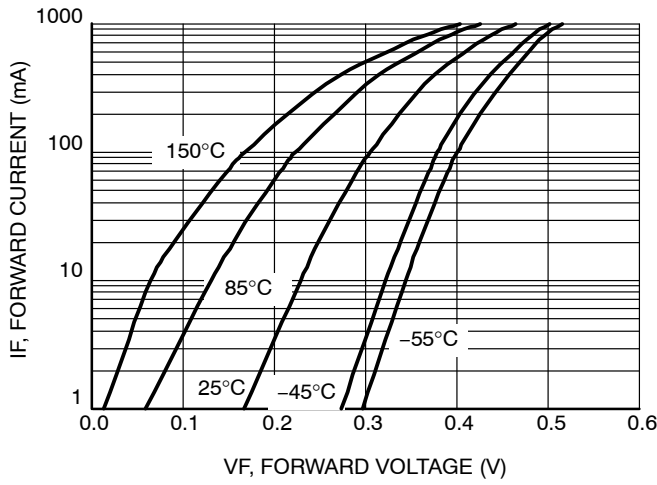


Figure 1. Forward Voltage

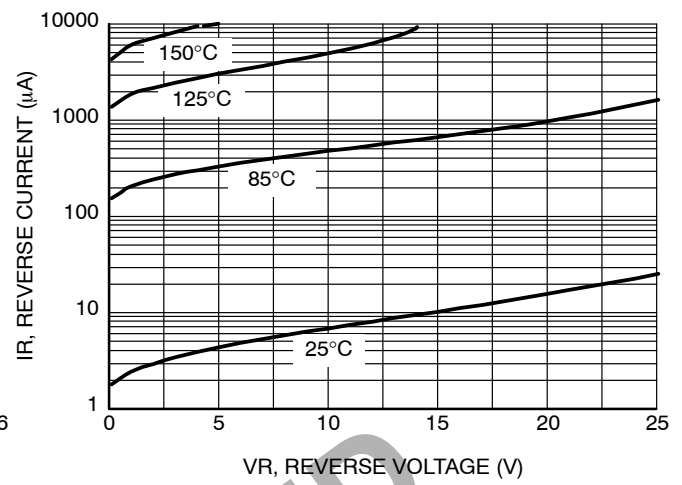


Figure 2. Leakage Current

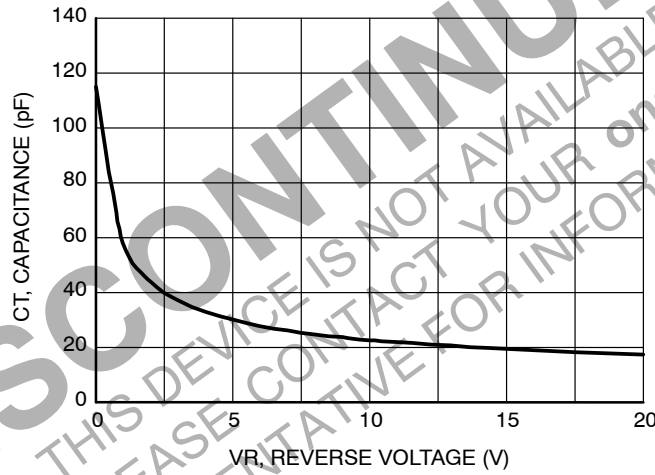


Figure 3. Total Capacitance

**REVISION HISTORY**

| Revision | Description of Changes | Date      |
|----------|------------------------|-----------|
| 8        | Document Discontinued. | 1/19/2026 |

This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.

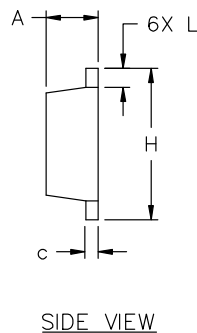
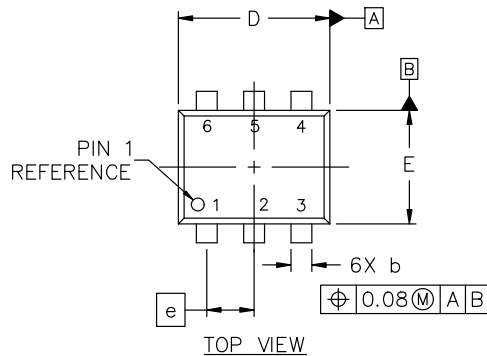
**DISCONTINUED**  
THIS DEVICE IS NOT AVAILABLE  
PLEASE CONTACT YOUR onsemi  
REPRESENTATIVE FOR INFORMATION


**SOT-563-6 1.60x1.20x0.55, 0.50P**  
**CASE 463A**  
**ISSUE J**

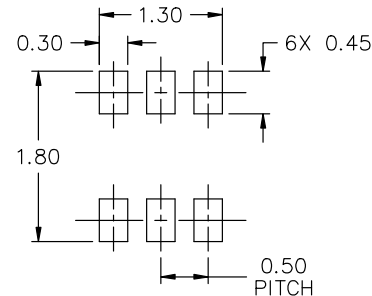
DATE 15 FEB 2024

## NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
2. ALL DIMENSION ARE IN MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.



| DIM | MILLIMETERS |      |      |
|-----|-------------|------|------|
|     | MIN.        | NOM. | MAX. |
| A   | 0.50        | 0.55 | 0.60 |
| b   | 0.17        | 0.22 | 0.27 |
| c   | 0.08        | 0.13 | 0.18 |
| D   | 1.50        | 1.60 | 1.70 |
| E   | 1.10        | 1.20 | 1.30 |
| e   | 0.50 BSC    |      |      |
| H   | 1.50        | 1.60 | 1.70 |
| L   | 0.10        | 0.20 | 0.30 |



## RECOMMENDED MOUNTING FOOTPRINT\*

\* FOR ADDITIONAL INFORMATION ON OUR Pb-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERM/D.

STYLE 1:  
PIN 1. EMITTER 1  
2. BASE 1  
3. COLLECTOR 2  
4. EMITTER 2  
5. BASE 2  
6. COLLECTOR 1

STYLE 2:  
PIN 1. EMITTER 1  
2. EMITTER 2  
3. BASE 2  
4. COLLECTOR 2  
5. BASE 1  
6. COLLECTOR 1

STYLE 3:  
PIN 1. CATHODE 1  
2. CATHODE 1  
3. ANODE/ANODE 2  
4. CATHODE 2  
5. CATHODE 2  
6. ANODE/ANODE 1

STYLE 4:  
PIN 1. COLLECTOR  
2. COLLECTOR  
3. BASE  
4. EMITTER  
5. COLLECTOR  
6. COLLECTOR

STYLE 5:  
PIN 1. CATHODE  
2. CATHODE  
3. ANODE  
4. ANODE  
5. CATHODE  
6. CATHODE

STYLE 6:  
PIN 1. CATHODE  
2. ANODE  
3. CATHODE  
4. CATHODE  
5. CATHODE  
6. CATHODE

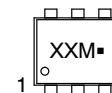
STYLE 7:  
PIN 1. CATHODE  
2. ANODE  
3. CATHODE  
4. CATHODE  
5. ANODE  
6. CATHODE

STYLE 8:  
PIN 1. DRAIN  
2. DRAIN  
3. GATE  
4. SOURCE  
5. DRAIN  
6. DRAIN

STYLE 9:  
PIN 1. SOURCE 1  
2. GATE 1  
3. DRAIN 2  
4. SOURCE 2  
5. GATE 2  
6. DRAIN 1

STYLE 10:  
PIN 1. CATHODE 1  
2. N/C  
3. CATHODE 2  
4. ANODE 2  
5. N/C  
6. ANODE 1

STYLE 11:  
PIN 1. EMITTER 2  
2. BASE 2  
3. COLLECTOR 1  
4. EMITTER 1  
5. BASE 1  
6. COLLECTOR 2

**GENERIC MARKING DIAGRAM\***


XX = Specific Device Code

M = Month Code

▪ = Pb-Free Package

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

|                         |                                        |                                                                                                                                                                                  |
|-------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| <b>DESCRIPTION:</b>     | <b>SOT-563-6 1.60x1.20x0.55, 0.50P</b> | <b>PAGE 1 OF 1</b>                                                                                                                                                               |

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