

# NSR0320XV6T1

## 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
- 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 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.

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

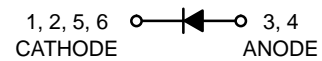
| Characteristic                                       | Symbol | Min | Typ  | Max  | Unit            |
|--|--------|-----|------|------|-----------------|
| Total Capacitance<br>( $V_R = 5.0$ V, $f = 1.0$ MHz) | $C_T$  | –   | 30   | 35   | pF              |
| Reverse Leakage<br>( $V_R = 15$ V)                   | $I_R$  | –   | 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             |



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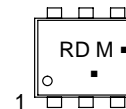
<http://onsemi.com>

## 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†        |
|---------------|----------|------------------|
| NSR0320XV6T1  | SOT-563* | 4000/Tape & Reel |
| NSR0320XV6T1G | SOT-563* | 4000/Tape & Reel |
| NSR0320XV6T5  | SOT-563* | 8000/Tape & Reel |
| NSR0320XV6T5G | SOT-563* | 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.

\*This package is inherently Pb-Free.

# NSR0320XV6T1

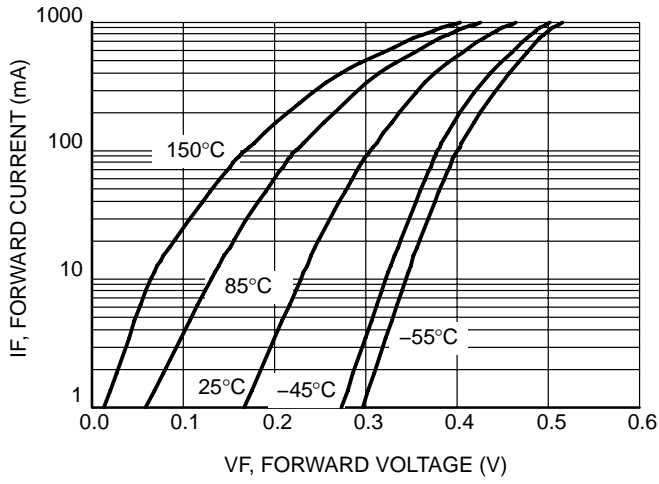


Figure 1. Forward Voltage

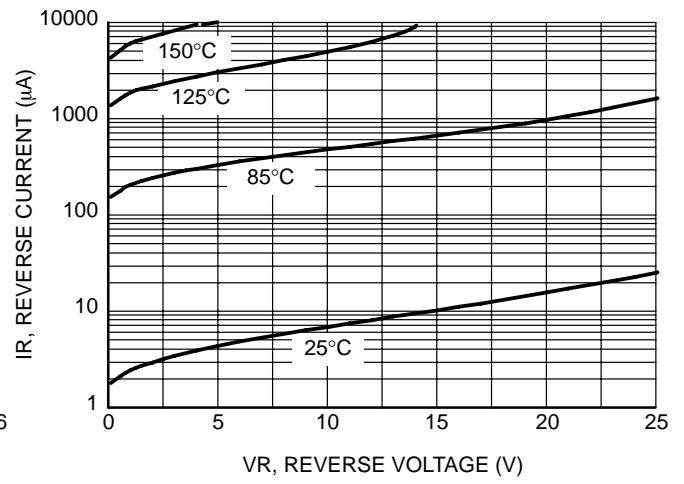


Figure 2. Leakage Current

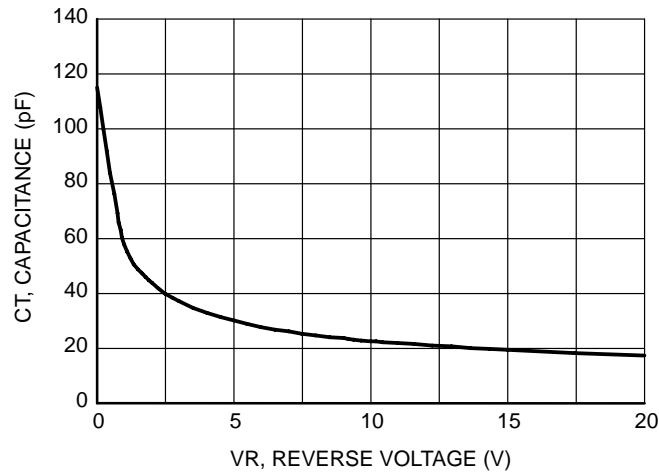
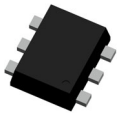


Figure 3. Total Capacitance

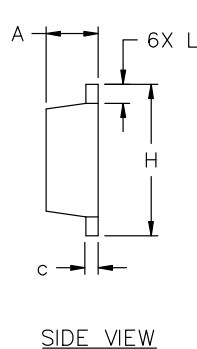
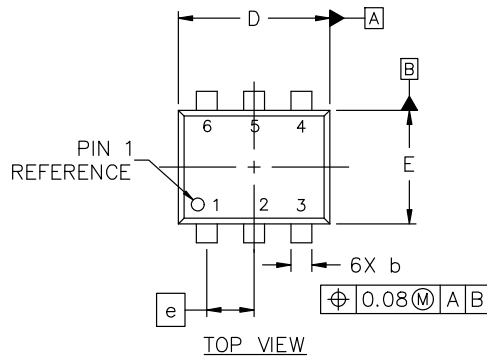


SOT-563-6 1.60x1.20x0.55, 0.50P  
CASE 463A  
ISSUE J

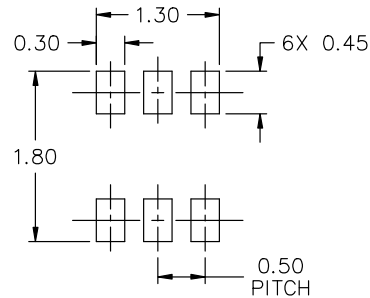
DATE 15 FEB 2024

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 |



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

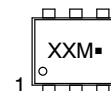
STYLE 10:  
PIN 1. CATHODE 1  
2. N/C  
3. CATHODE 2  
4. ANODE 2  
5. N/C  
6. ANODE 1

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

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, SOLDERRM/D.

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

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