

# 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 @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_F$	200 2.0	mW mW/ $^\circ\text{C}$
Forward Current (DC) – Continuous	$I_F$	1	A
Forward Current $t = 8.3$ 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)

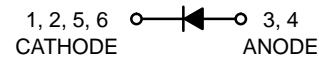
Characteristic	Symbol	Min	Typ	Max	Unit
Total Capacitance ( $V_R = 5.0$ V, $f = 1.0$ MHz)	$C_T$	–	30	35	pF
Reverse Leakage ( $V_R = 15$ V)	$I_R$	–	10	50	$\mu\text{Adc}$
Forward Voltage ( $I_F = 10$ mAdc)	$V_F$	–	0.24	0.27	Vdc
Forward Voltage ( $I_F = 100$ mAdc)	$V_F$	–	0.30	0.35	Vdc
Forward Voltage (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



ON Semiconductor®

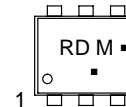
<http://onsemi.com>

## 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)

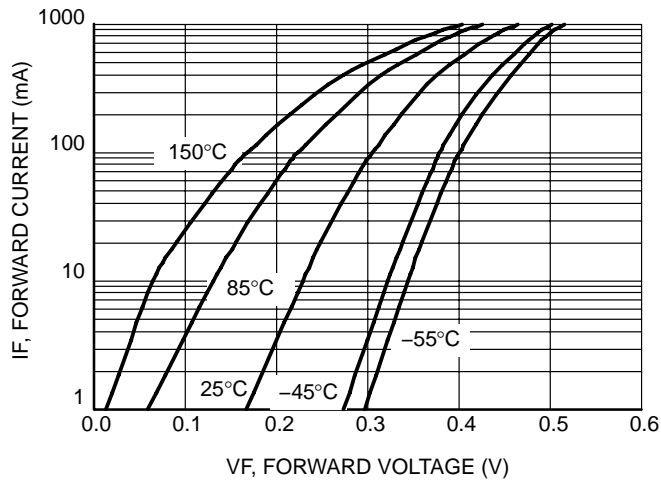
### ORDERING INFORMATION

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

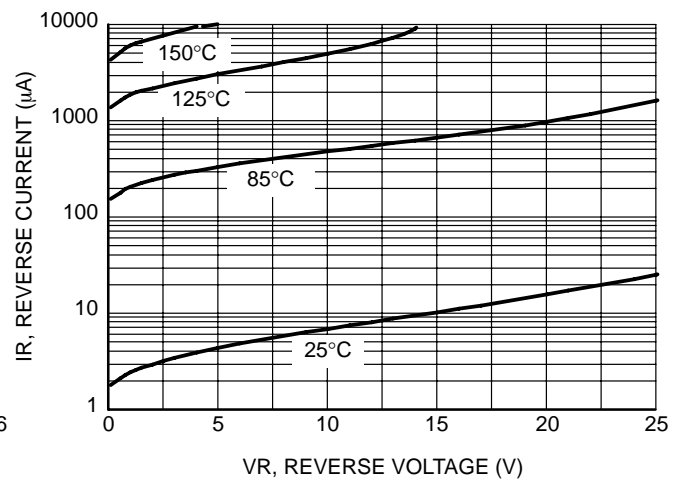
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

\*This package is inherently Pb-Free.

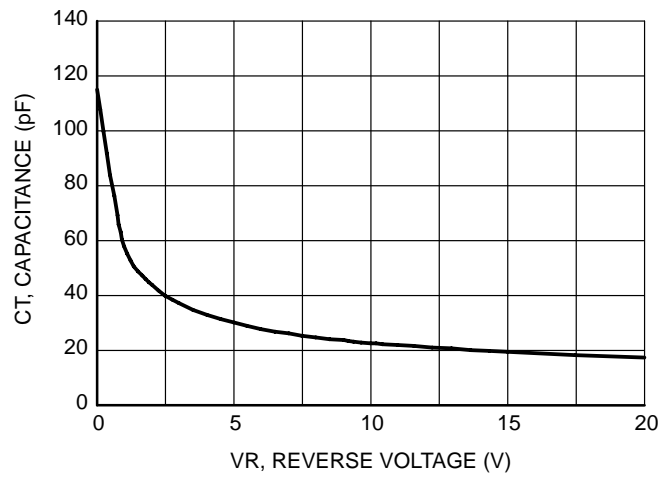
# NSR0320XV6T1



**Figure 1. Forward Voltage**



**Figure 2. Leakage Current**



**Figure 3. Total Capacitance**

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

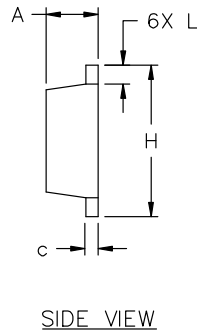
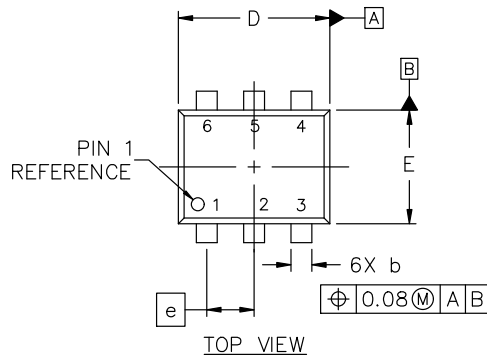


**SOT-563-6 1.60x1.20x0.55, 0.50P**  
**CASE 463A**  
**ISSUE J**

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

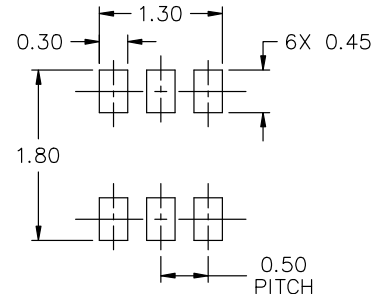
**STYLE 7:**  
 PIN 1. CATHODE  
 2. ANODE  
 3. CATHODE  
 4. CATHODE  
 5. ANODE  
 6. CATHODE

**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

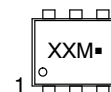
**STYLE 10:**  
 PIN 1. CATHODE 1  
 2. N/C  
 3. CATHODE 2  
 4. ANODE 2  
 5. N/C  
 6. ANODE 1

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



\* 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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