# NSR1020MW2T1G

# **Schottky Barrier Diodes**

This Schottky Barrier Diode in the SOD-323 package offers extremely low Vf performance. The low forward voltage makes them capable of handling high current in a very small package. The resulting device is ideally suited for application as a blocking diode in charging applications or as part of discrete buck converter or discrete boost converter. As part of a buck conversion circuit, a boost conversion circuit or a charging circuit the low Vf drop of the schottky improves the efficiency of the overall device by consuming less power in the forward mode.

#### **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<sub>J</sub> = 125°C unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	20	Vdc
Peak Revese Voltage	$V_{RM}$	30	V
Forward Power Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	P <sub>F</sub>	200 2.0	mW mW/°C
Forward Current (DC) Continuous	IF	1	Α
Forward Current t = 8.3 ms Half Sinewave	lF	5	Α
Junction Temperature	TJ	125 Max	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

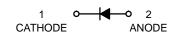
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

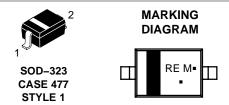


# ON Semiconductor®

http://onsemi.com

# HIGH CURRENT SCHOTTKY BARRIER DIODE





RE = Specific Device Code

M = Date Code

= Pb-Free Package

(Note: Microdot may be in either location)

# **ORDERING INFORMATION**

Device	Package	Shipping†
NSR1020MW2T1G	SOD-323 (Pb-Free)	'
NSR1020MW2T3G	SOD-323 (Pb-Free)	10,000/Tape & Reel

<sup>†</sup>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<sub>A</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Тур	Max	Unit
Total Capacitance (V <sub>R</sub> = 5.0 V, f = 1.0 MHz)	C <sub>T</sub>	-	25	29	pF
Reverse Leakage (V <sub>R</sub> = 15 V)	I <sub>R</sub>	-	-	40	μAdc
Forward Voltage (I <sub>F</sub> = 1 mAdc)	V <sub>F</sub>	-	-	0.20	Vdc
Forward Voltage (I <sub>F</sub> = 10 mAdc)	V <sub>F</sub>	-	-	0.26	Vdc
Forward Voltage (I <sub>F</sub> = 100 mAdc)	V <sub>F</sub>	-	-	0.33	Vdc
Forward Voltage (I <sub>F</sub> = 500 mAdc)	V <sub>F</sub>	-	-	0.44	Vdc
Forward Voltage (I <sub>F</sub> = 1000 mAdc)	V <sub>F</sub>	-	-	0.54	Vdc

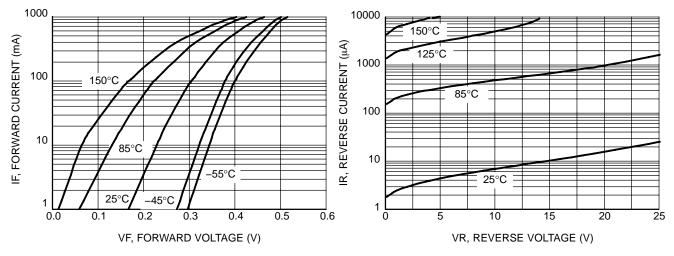


Figure 1. Forward Voltage

Figure 2. Leakage Current

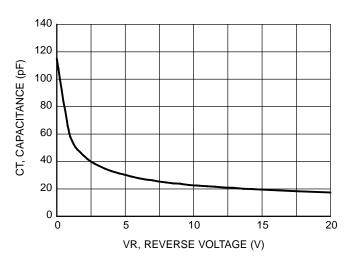
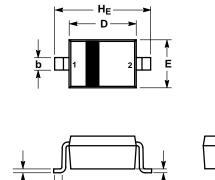


Figure 3. Total Capacitance

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## PACKAGE DIMENSIONS

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



NOTE 5



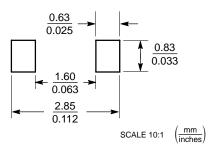
#### NOTES:

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

	MILLIMETERS			INCHES			
DIM	MIN	NOM	MAX	MIN	NOM	MAX	
Α	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	
С	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: PIN 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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