

# 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) @  $I_F = 10 \text{ mAdc}$
- 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 @ $T_A = 25^\circ\text{C}$ 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 $t = 8.3 \text{ ms}$ Half Sinewave	$I_F$	5	A
Junction Temperature	$T_J$	125 Max	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

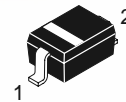
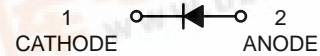
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.



**ON Semiconductor®**

<http://onsemi.com>

## HIGH CURRENT SCHOTTKY BARRIER DIODE



**SOD-323  
CASE 477  
STYLE 1**

### 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 (Pb-Free)	3000/Tape & Reel
NSR0320MW2T3G	SOD-323 (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.



# NSR0320MW2T1

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	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>	–	10	50	μA <sub>dc</sub>
Reverse Leakage (V <sub>R</sub> = 2.0 V @ 85° C)	I <sub>R</sub>	–	200	300	μA
Reverse Leakage (V <sub>R</sub> = 15.0 V @ 85° C)	I <sub>R</sub>	–	450	1000	μA
Forward Voltage (I <sub>F</sub> = 10 mAdc)	V <sub>F</sub>	–	0.24	0.27	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 100 mAdc)	V <sub>F</sub>	–	0.30	0.35	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 900 mAdc)	V <sub>F</sub>	–	0.45	0.50	V <sub>dc</sub>

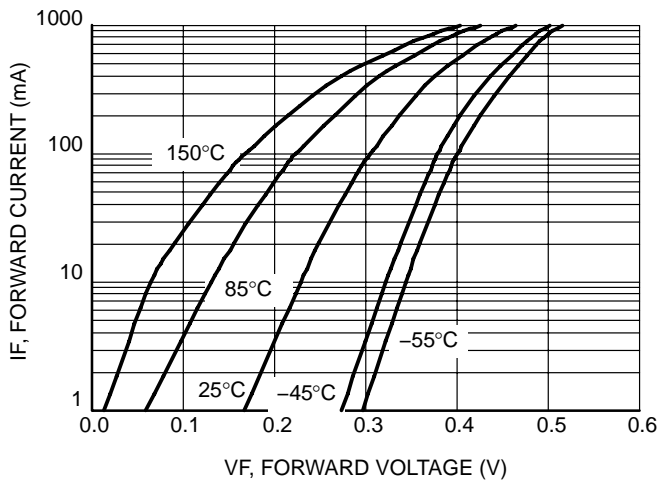


Figure 1. Forward Voltage

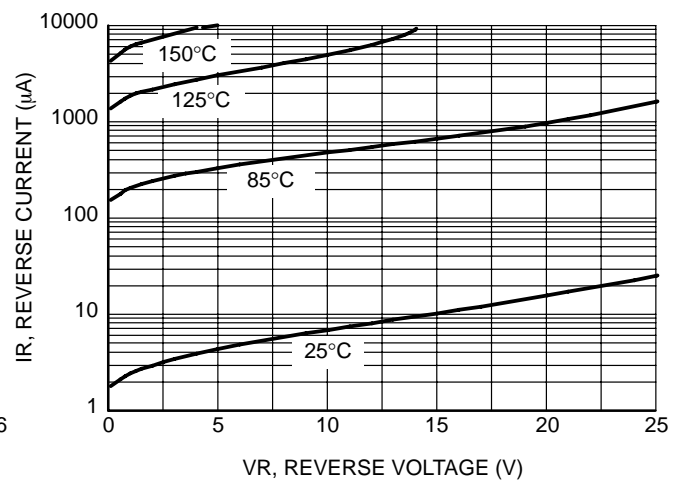


Figure 2. Leakage Current

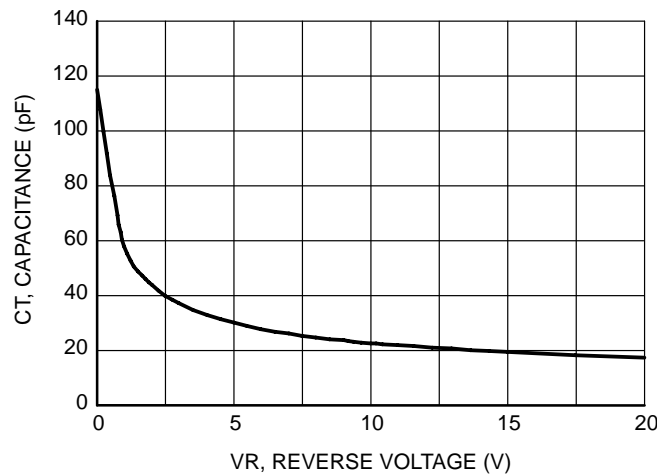
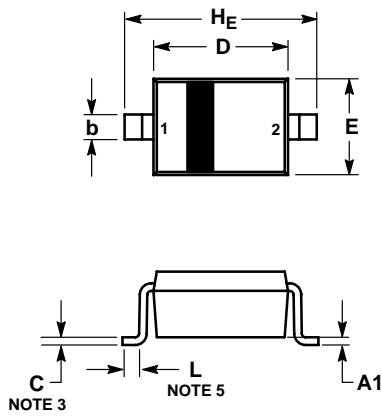


Figure 3. Total Capacitance

# NSR0320MW2T1

## PACKAGE DIMENSIONS

SOD-323  
CASE 477-02  
ISSUE G



NOTES:

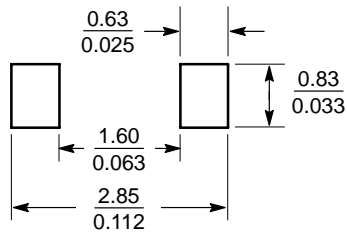
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

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\*



SCALE 10:1  $\left(\frac{\text{mm}}{\text{inches}}\right)$

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# NSR0320MW2T1

**ON Semiconductor** and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor  
P.O. Box 61312, Phoenix, Arizona 85082-1312 USA  
**Phone:** 480-829-7710 or 800-344-3860 Toll Free USA/Canada  
**Fax:** 480-829-7709 or 800-344-3867 Toll Free USA/Canada  
**Email:** orderlit@onsemi.com

**N. American Technical Support:** 800-282-9855 Toll Free  
USA/Canada

**Japan:** ON Semiconductor, Japan Customer Focus Center  
2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051  
**Phone:** 81-3-5773-3850

**ON Semiconductor Website:** <http://onsemi.com>

**Order Literature:** <http://www.onsemi.com/litorder>

For additional information, please contact your  
local Sales Representative.