Schottky Barrier Diodes

NSR0320MW2T1G, NSVR0320MW2T1G, NSR0320MW2T3G

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 mAdc
- High Current Capability
- ESD Rating:
  - Human Body Model: CLASS 3B
  - Machine Model: C
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC–Q101 Qualified and PPAP Capable
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant*

MAXIMUM RATINGS (T_J = 125°C unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	20	Vdc
Peak Revese Voltage	V_{RM}	23	V
Forward Power Dissipation @ T_A = 25°C Derate above 25°C	P_F	200 2.0	mW mW/°C
Forward Current (DC) Continuous	I_F	1	A
Forward Current t = 8.3 ms Half Sinewave	I_{FSM}	5	A
Thermal Resistance, Junction–to–Ambient 175 mm^2, 1 oz. Cu, FR–4	$R_{\theta JA}$	500	°C/W
Thermal Resistance, Junction–to–Lead 175 mm^2, 1 oz. Cu, FR–4	$R_{\theta JL}$	322	°C/W
Junction Temperature Range	T_J	–55 to +125	°C
Storage Temperature Range	T_{stg}	–55 to +150	°C

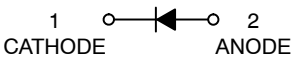
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

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†
NSR0320MW2T1G	SOD–323 (Pb–Free)	3,000 / Tape & Reel
NSR0320MW2T3G	SOD–323 (Pb–Free)	10,000 / Tape & Reel
NSVR0320MW2T1G	SOD–323 (Pb–Free)	3,000 / 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.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Total Capacitance (V_R = 5.0 V, f = 1.0 MHz)	C_T	–	25	29	pF
Reverse Leakage (V_R = 15 V) (V_R = 2.0 V @ 85°C) (V_R = 15.0 V @ 85°C)	I_R	 – – –	 10 200 450	 50 – –	μA
Forward Voltage (I_F = 10 mA) (I_F = 100 mA) (I_F = 900 mA)	V_F	 – – –	 0.24 0.30 0.45	 0.27 0.35 0.50	V

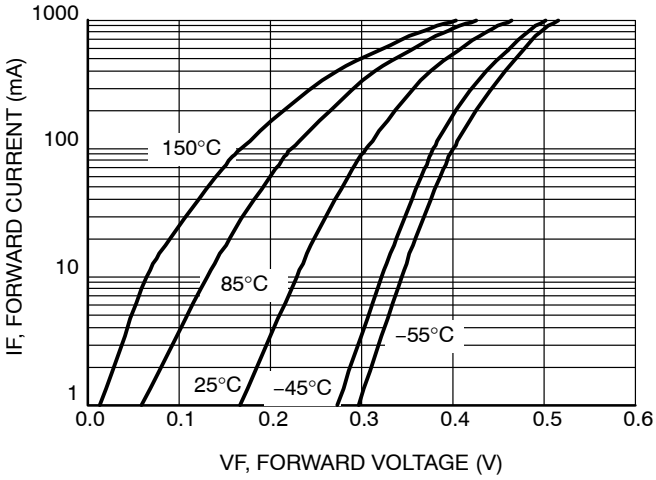


Figure 1. Forward Voltage

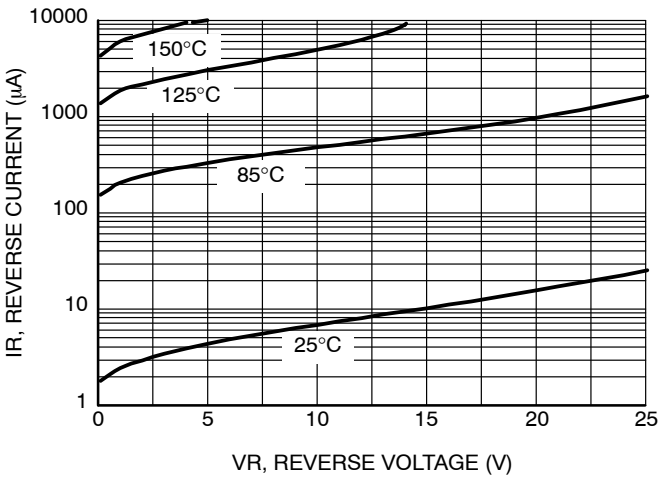


Figure 2. Leakage Current

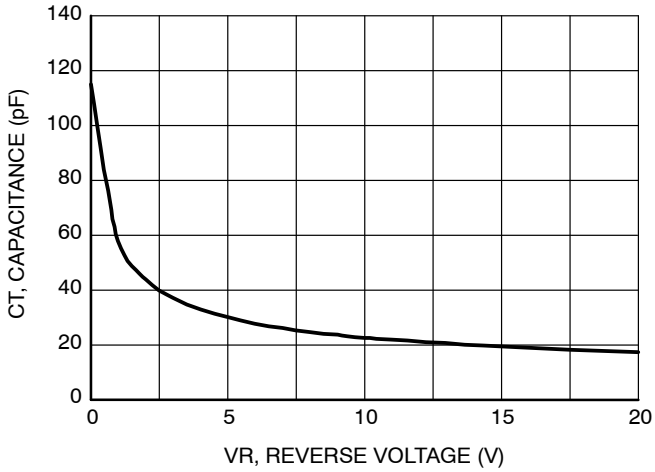
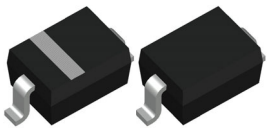


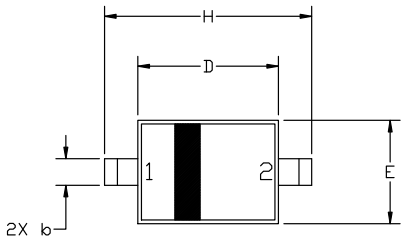
Figure 3. Total Capacitance

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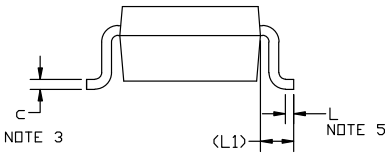


SOD−323 1.70x1.25x0.85
CASE 477
ISSUE K

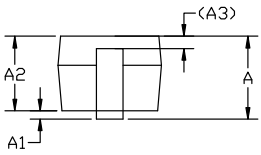
DATE 11 MAR 2024



TOP VIEW



SIDE VIEW

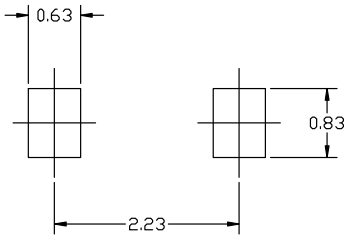


END VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING AS PER ASME Y14.5M, 2018.
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 MEASURE FROM END OF RADIUS.

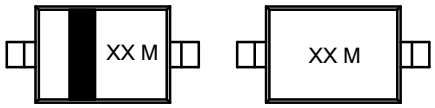
DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.80	0.90	1.00
A1	0.00	0.05	0.10
A2	0.75	0.85	0.95
A3	0.15 (REF)		
b	0.25	0.32	0.4
c	0.09	0.12	0.18
D	1.60	1.70	1.80
E	1.15	1.25	1.35
H	2.30	2.50	2.70
L	0.08	---	---
L1	0.40 (REF)		



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*



STYLE 1 STYLE 2

XX = Specific Device Code
M = Date Code

*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.

STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
2. ANODE

STYLE 2:
NO POLARITY

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DESCRIPTION:	**SOD−323 1.70x1.25x0.85**		**PAGE 1 OF 1**

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