

# Schottky Barrier Diode

## NSR0140P2

These Schottky barrier diodes are designed for high-speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand-held and portable applications where space is limited.

### Features

- Extremely Fast Switching Speed
- Extremely Low Forward Voltage – 0.28 V (Typ) @  $I_F = 1.0$  mA
- Low Reverse Current
- Lead-Free Plating
- This is a Pb-Free Device

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RM}$	40	V
Continuous Reverse Voltage (DC)	$V_R$	30	V
Continuous Forward Current (DC)	$I_F$	70	mA
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	500	mA
ESD Rating: Class 1C per Human Body Model Class A per Machine Model			

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.

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	100 1.0	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	1000	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +125	$^\circ\text{C}$

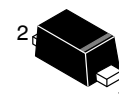
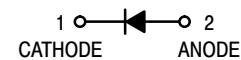
1. FR-5 Minimum Pad.



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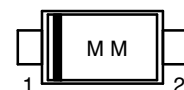
[www.onsemi.com](http://www.onsemi.com)

## 40 V SCHOTTKY BARRIER DIODE



SOD-923  
CASE 514AA

### MARKING DIAGRAM



M = Specific Device Code\*  
(Character is rotated 270° clockwise)  
M = Month Code

### ORDERING INFORMATION

Device	Package	Shipping†
NSR0140P2T5G	SOD-923 (Pb-Free)	8000/Tape & Reel

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

# NSR0140P2

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I <sub>R</sub> = 10 μA)	V <sub>(BR)R</sub>	30	-	-	V
Total Capacitance (V <sub>R</sub> = 1.0 V, f = 1.0 MHz)	C <sub>T</sub>	-	2.0	2.5	pF
Reverse Leakage (V <sub>R</sub> = 30 V)	I <sub>R</sub>	-	300	500	nA
Forward Voltage (I <sub>F</sub> = 1.0 mA)	V <sub>F</sub>	-	0.28	0.35	V

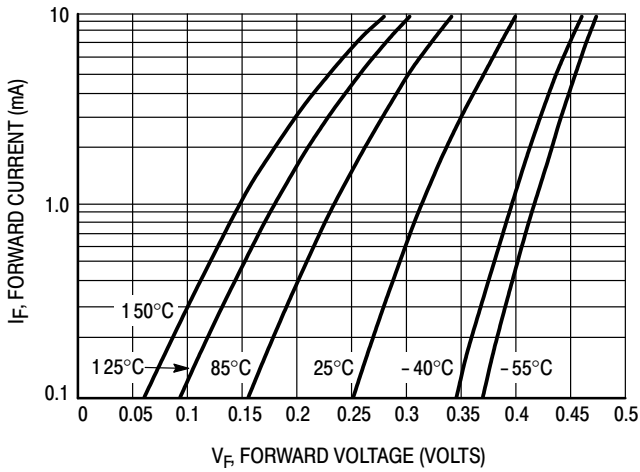


Figure 1. Typical Forward Voltage

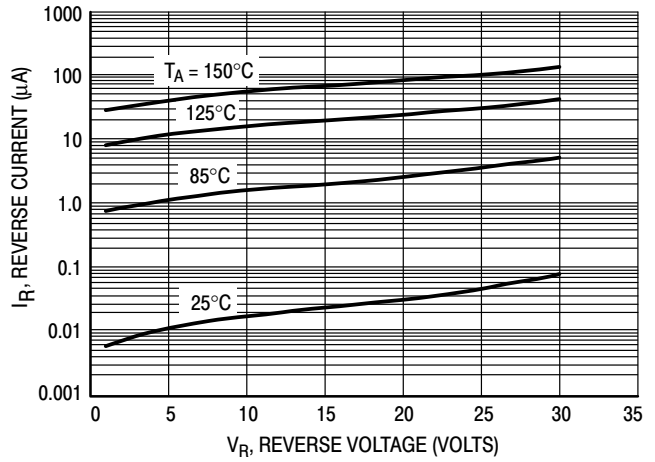


Figure 2. Reverse Current versus Reverse Voltage

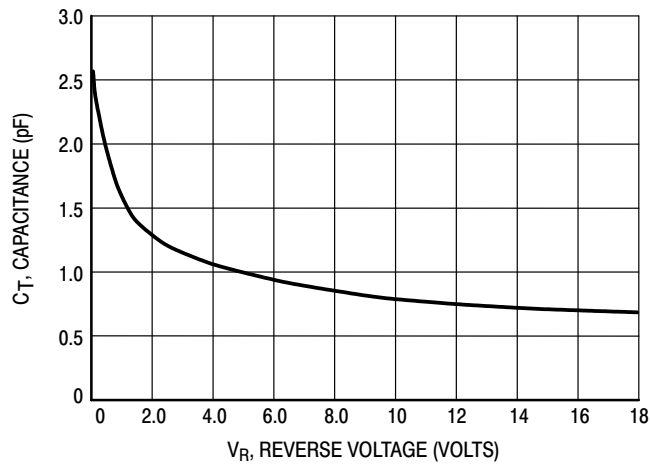
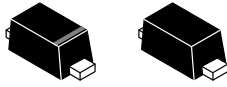


Figure 3. Typical Capacitance

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

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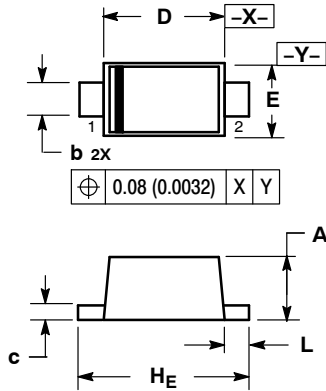


STYLE 1    STYLE 2

SCALE 8:1

**SOD-923**  
CASE 514AB-01  
ISSUE B

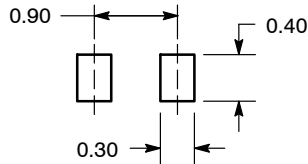
DATE 07 MAR 2007



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: MILLIMETERS.
  3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.34	0.37	0.40	0.013	0.015	0.016
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
H <sub>E</sub>	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

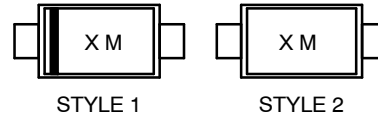
### SOLDERING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

\*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\*



X = 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.

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

STYLE 2: NO POLARITY

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<b>DESCRIPTION:</b>	<b>SOD-923, 1.0X0.6X0.37, MAX HEIGHT 0.40</b>	<b>PAGE 1 OF 1</b>

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