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

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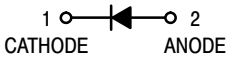
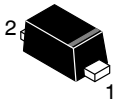
40 V SCHOTTKY BARRIER DIODE





SOD−923
CASE 514AB

MARKING DIAGRAM

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

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°C Derate above 25°C	P_D	100 1.0	mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	1000	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +125	°C

1. FR−5 Minimum Pad.

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.

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μA)	$V_{(BR)R}$	30	–	–	V
Total Capacitance (V_R = 1.0 V, f = 1.0 MHz)	C_T	–	2.0	2.5	pF
Reverse Leakage (V_R = 30 V)	I_R	–	300	500	nA
Forward Voltage (I_F = 1.0 mA)	V_F	–	0.28	0.35	V

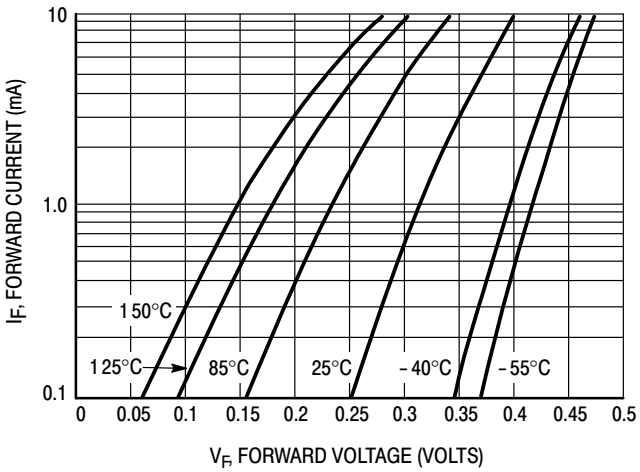


Figure 1. Typical Forward Voltage

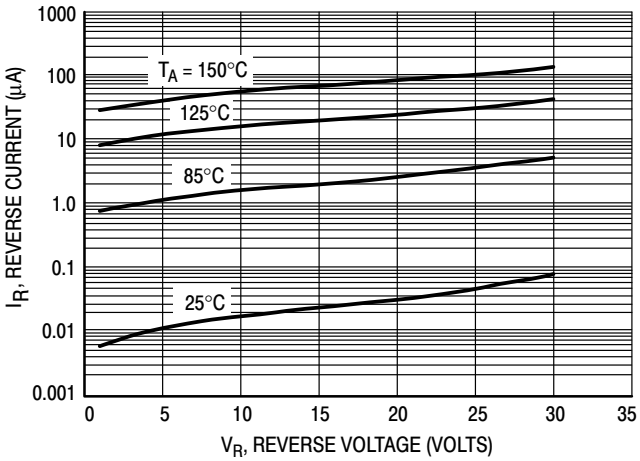


Figure 2. Reverse Current versus Reverse Voltage

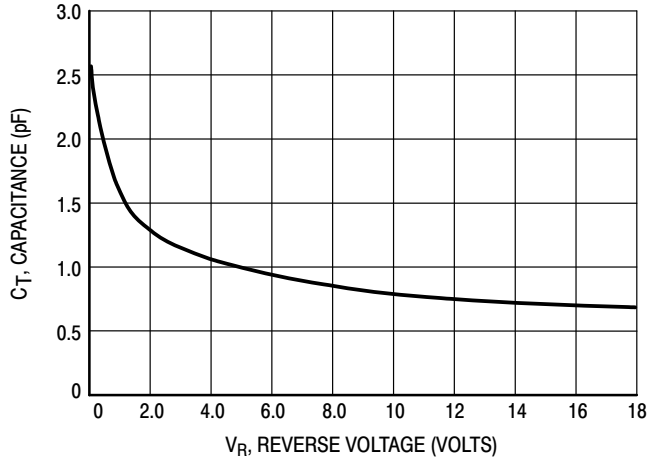
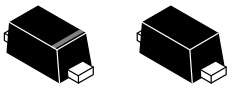


Figure 3. Typical Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

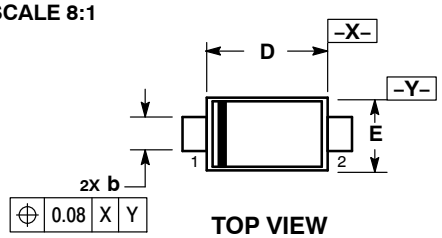
SOD−923
CASE 514AB
ISSUE D

DATE 03 SEP 2020

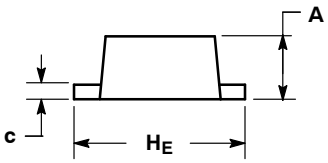


STYLE 1 STYLE 2

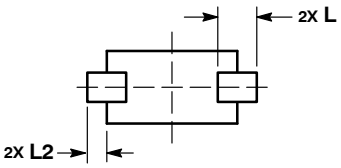
SCALE 8:1



TOP VIEW

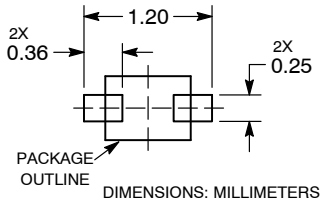


SIDE VIEW



BOTTOM VIEW

SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

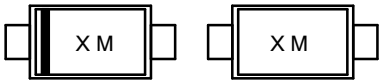
See Application Note AND8455/D for more mounting details

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

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.
5. DIMENSION L WILL NOT EXCEED 0.30mm.

	MILLIMETERS			INCHES		
DIM	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_E	0.95	1.00	1.05	0.037	0.039	0.041
L	0.19 REF			0.007 REF		
L2	0.05	0.10	0.15	0.002	0.004	0.006

GENERIC MARKING DIAGRAM*



STYLE 1 STYLE 2

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. 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−923, 1.0x0.6x0.37, MAX HEIGHT 0.40**		**PAGE 1 OF 1**

ADDITIONAL INFORMATION

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Technical Library: www.onsemi.com/design/resources/technical−documentation
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