Schottky Barrier Diode

NSR0530P2

Schottky barrier diodes are optimized for very low forward voltage drop and low leakage current and are used in a wide range of dc−dc converter, clamping and protection applications in portable devices. NSR0530P2 in a SOD−923 miniature package enables designers to meet the challenging task of achieving higher efficiency and meeting reduced space requirements.

Features

- Very Low Forward Voltage Drop − 370 mV @ 100 mA
- Low Reverse Current − 1.4 μA @ 10 V VR
- 500 mA of Continuous Forward Current
- Power Dissipation of 190 mW with Minimum Trace
- Very High Switching Speed
- Low Capacitance − CT = 10 pF
- 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

Typical Applications

- LCD and Keypad Backlighting
- Camera Photo Flash
- Buck and Boost dc−dc Converters
- Reverse Voltage and Current Protection
- Clamping & Protection

Markets

- Mobile Handsets
- MP3 Players
- Digital Camera and Camcorders
- Notebook PCs & PDAs
- GPS

MAXIMUM RATINGS

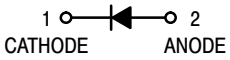
Rating		Symbol	Value	Unit
Reverse Voltage		V_R	30	V
Forward Current (DC)		I_F	500	mA
ESD Rating:	Human Body Model Machine Model	ESD	Class 3B Class C	

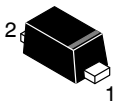
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ON Semiconductor®

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30 V SCHOTTKY BARRIER DIODE





SOD−923
CASE 514AB

MARKING DIAGRAM



D = Specific Device Code
M = Month Code

ORDERING INFORMATION

Device	Package	Shipping†
NSR0530P2T5G	SOD−923 (Pb−Free)	8000 / Tape & Reel
NSVR0530P2T5G	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.

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THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Thermal Resistance Junction–to–Ambient (Note 1) Total Power Dissipation @ T_A = 25°C	 $R_{\theta JA}$ P_D			 520 190	 °C/W mW
Thermal Resistance Junction–to–Ambient (Note 2) Total Power Dissipation @ T_A = 25°C	 $R_{\theta JA}$ P_D			 175 570	 °C/W mW
Junction and Storage Temperature Range	T_J, T_{stg}			–55 to +125	°C

1. Mounted onto a 4 in square FR−4 board 10 mm sq. 1 oz. Cu 0.06” thick single sided. Operating to steady state.
2. Mounted onto a 4 in square FR−4 board 1 in sq. 1 oz. Cu 0.06” thick single sided. Operating to steady state.

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage (V_R = 10 V) (V_R = 30 V)	I_R		 1.4 24	 10 200	µA
Forward Voltage (I_F = 10 mA) (I_F = 100 mA) (I_F = 500 mA)	V_F		0.28 0.37 0.52	0.37 0.46 0.62	V
Total Capacitance (V_R = 1.0 V, f = 1 MHz)	C_T		10		pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

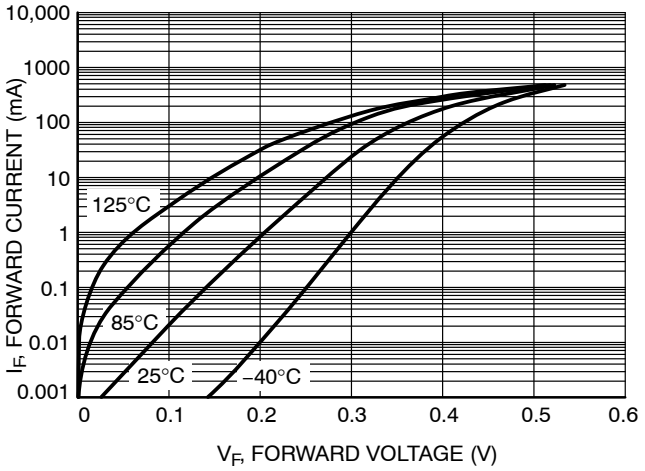


Figure 1. Forward Voltage

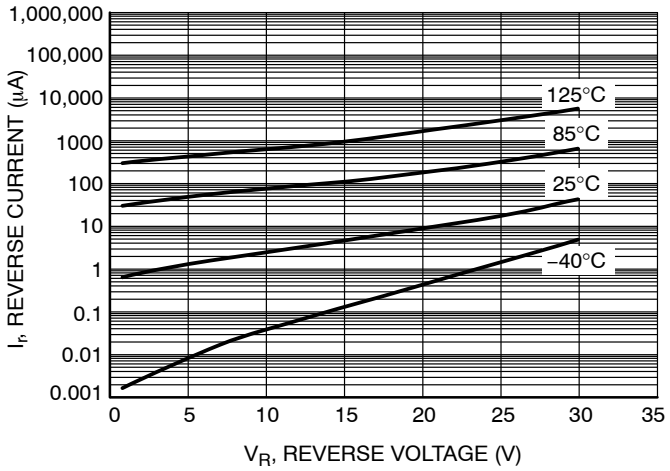


Figure 2. Leakage Current

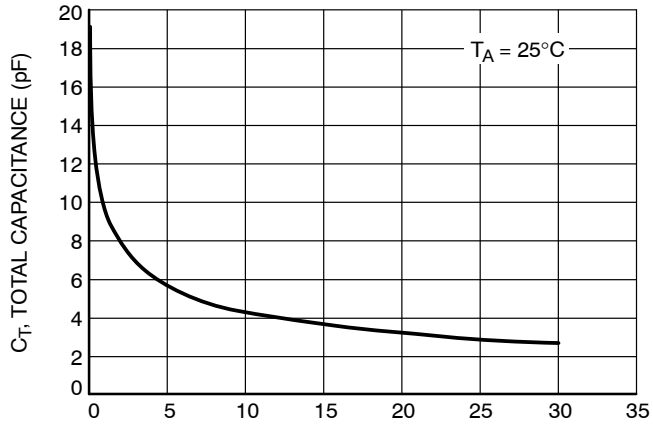


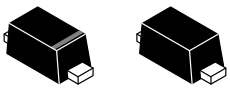
Figure 3. Total Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

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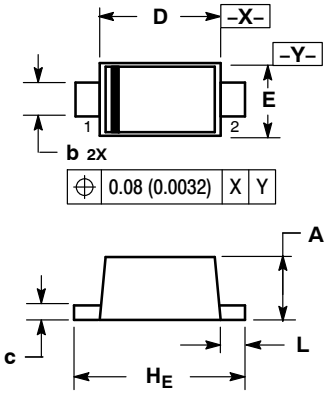
SOD−923
CASE 514AB−01
ISSUE B

DATE 07 MAR 2007



STYLE 1 STYLE 2

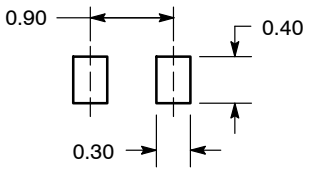
SCALE 8:1



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.

	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	0.05	0.10	0.15	0.002	0.004	0.006

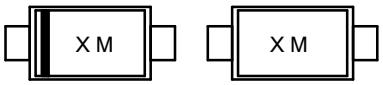
SOLDERING FOOTPRINT*



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*



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.

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**

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