

Schottky Barrier Diode

NSR0170P2

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. NSR0170P2 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 – 560 mV @ 10 mA
- Low Reverse Current – 25 nA @ 50 V VR
- 70 mA of Continuous Forward Current
- Power Dissipation of 240 mW with Minimum Trace
- Very High Switching Speed
- Low Capacitance – CT = 2 pF
- NSVR 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	70	V
Forward Current (DC)	I_F	70	mA
ESD Rating: Human Body Model Machine Model	ESD	Class 2 Class B	

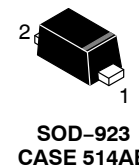
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.



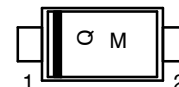
ON Semiconductor®

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70 V SCHOTTKY BARRIER DIODE



MARKING DIAGRAM



Q = Specific Device Code
M = Month Code

ORDERING INFORMATION

Device	Package	Shipping†
NSR0170P2T5G	SOD–923 (Pb–Free)	2 mm Pitch 8000/Tape & Reel
NSVR0170P2T5G	SOD–923 (Pb–Free)	2 mm Pitch 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.

NSR0170P2

THERMAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Thermal Resistance Junction-to-Ambient (Note 1) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ P_D			520 240	$^\circ\text{C/W}$ mW
Thermal Resistance Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ P_D			175 710	$^\circ\text{C/W}$ mW
Junction and Storage Temperature Range	T_J, T_{stg}			-55 to +150	$^\circ\text{C}$

- Mounted onto a 4 in square FR-4 board 10 mm sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.
- 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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage ($V_R = 50\text{ V}$) ($V_R = 70\text{ V}$)	I_R		25 -	90 3.0	nA μA
Forward Voltage ($I_F = 1.0\text{ mA}$) ($I_F = 10\text{ mA}$) ($I_F = 15\text{ mA}$)	V_F		0.34 0.56 0.65	0.39 0.64 0.73	V
Total Capacitance ($V_R = 0\text{ V}, f = 1\text{ MHz}$)	C_T		2.0		pF

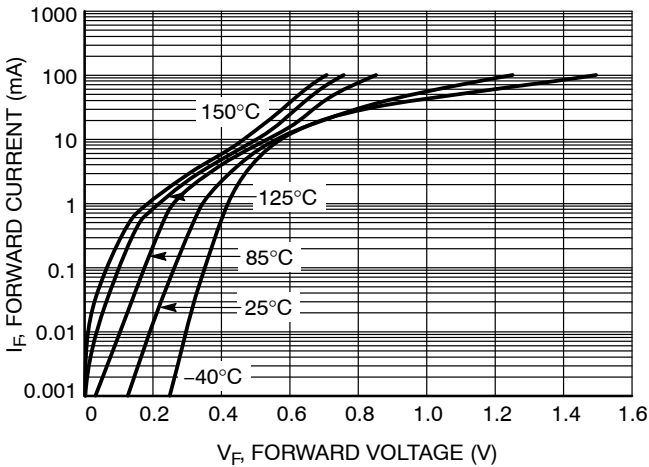


Figure 1. Forward Voltage

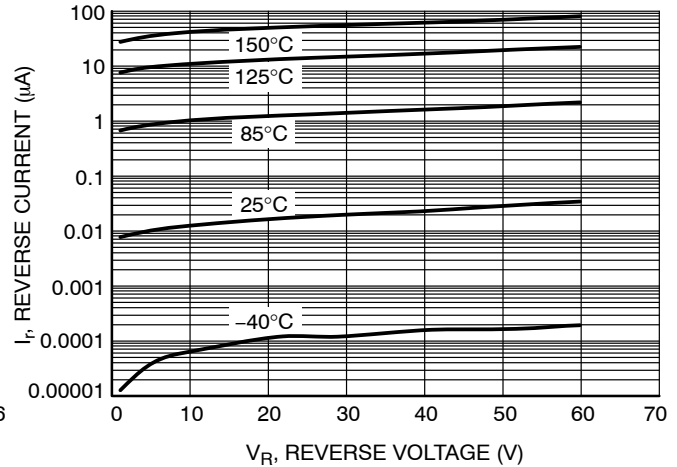


Figure 2. Leakage Current

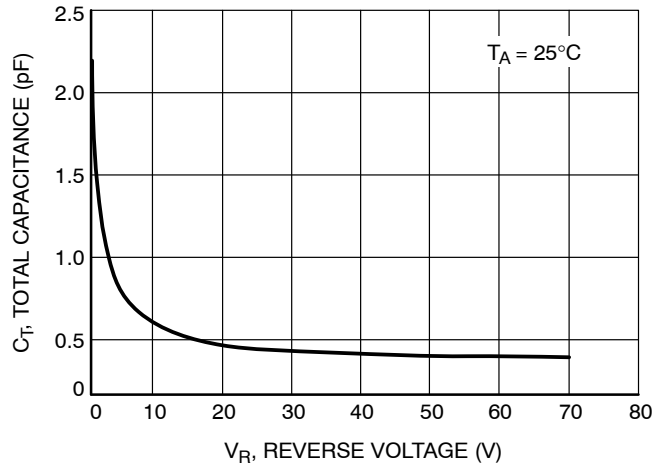


Figure 3. Total Capacitance

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