NSR0340P2T5G

Schottky Barrier Diode

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. NSR0340P2 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 − 420 mV @ 100 mA
- Low Reverse Current − 0.6 μA @ 10 V
- Continuous Forward Current − 200 mA
- Power Dissipation with Minimum Trace − 190 mW
- Very High Switching Speed − 3.0 ns @ 10 mA
- Low Capacitance − 4 pF @ 5.0 V
- This is a Pb−Free Device

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

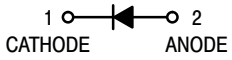
Rating	Symbol	Value	Unit
Reverse Voltage	V_R	40	V
Forward Current (DC)	I_F	200	mA
Non−Repetitive Peak Forward Surge Current	I_{FSM}	1.0	A
ESD Rating: Human Body Model Machine Model	ESD	Class 2 Class A	

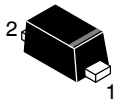
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

ON Semiconductor®

http://onsemi.com

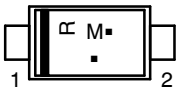
40 V SCHOTTKY BARRIER DIODE





SOD−923
CASE 514AB
PLASTIC

MARKING DIAGRAM



R = Specific Device Code
M = Month Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
NSR0340P2T5G	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.

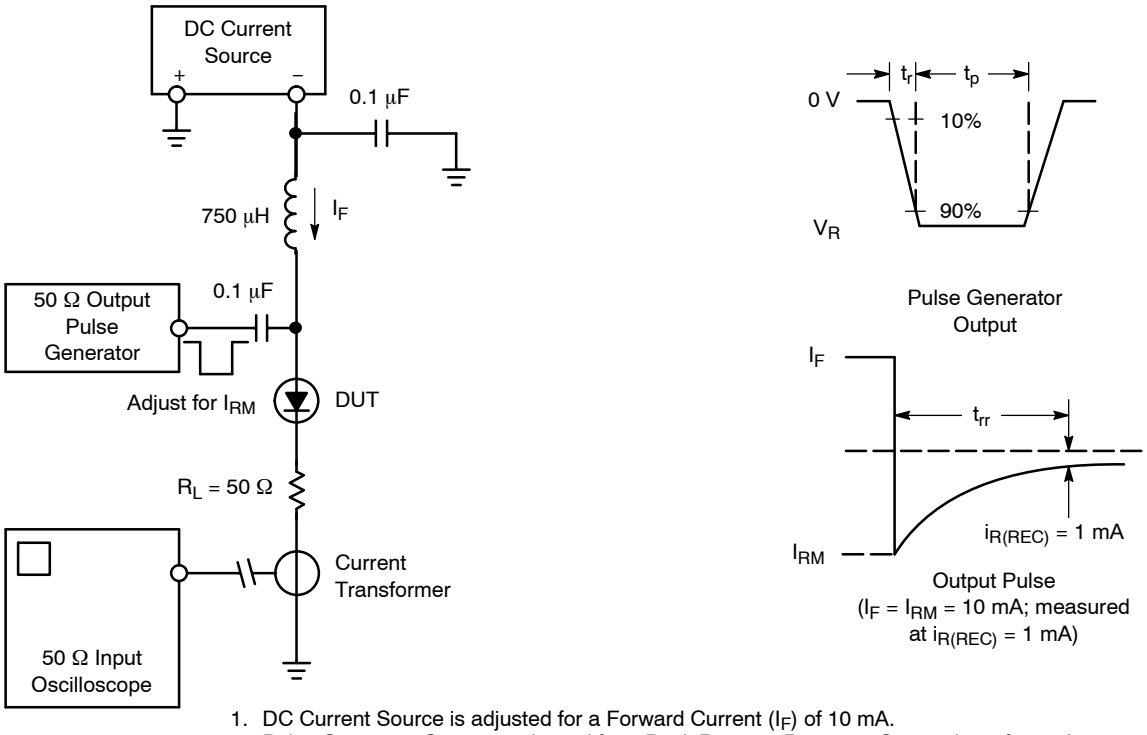
THERMAL CHARACTERISTICS

Characteristic	Symbol	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 = 40 V)	I_R		 0.6 4.0	 5.0 20	μA
Forward Voltage (I_F = 10 mA) (I_F = 100 mA) (I_F = 200 mA)	V_F		 290 420 520	 320 460 560	mV
Total Capacitance (V_R = 5.0 V, f = 1 MHz)	C_T		 4.0		pF
Reverse Recovery Time (I_F = I_R = 10 mA, I_R = 1.0 mA)	t_{rr}		 3.0		ns



1. DC Current Source is adjusted for a Forward Current (I_F) of 10 mA.
2. Pulse Generator Output is adjusted for a Peak Reverse Recovery Current I_{RM} of 10 mA.
3. Pulse Generator transition time << t_{rr}.
4. $I_{R(REC)}$ is measured at 1 mA. Typically 0.1 X I_{RM} or 0.25 X I_{RM}.
5. t_p » t_{rr}

Figure 1. Recovery Time Equivalent Test Circuit

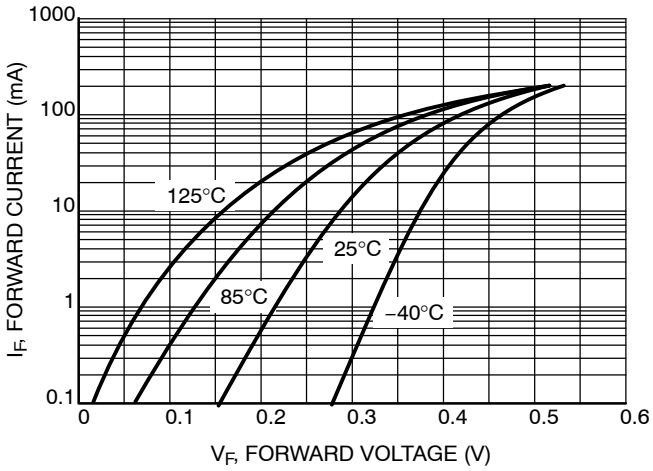


Figure 2.

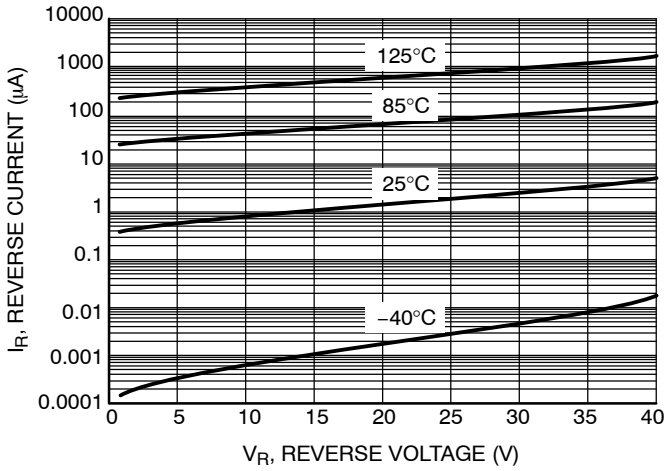


Figure 3.

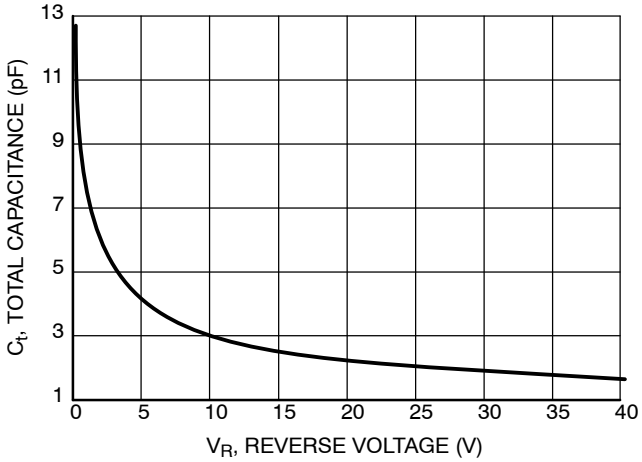
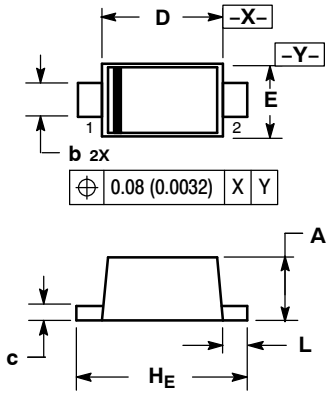


Figure 4.

NSR0340P2T5G

PACKAGE DIMENSIONS

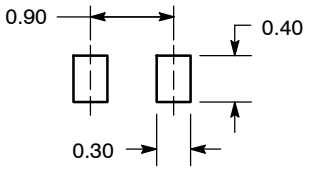
SOD−923
CASE 514AB−01
ISSUE B



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.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
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