Schottky Barrier Diode

NSR0530H

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. NSR0530H in a SOD−323 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
- Very High Switching Speed
- Low Capacitance − CT = 10 pF
- 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

ON Semiconductor®

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30 V SCHOTTKY BARRIER DIODE

1 CATHODE   2 ANODE

SOD−323
CASE 477
STYLE 1

MARKING DIAGRAM

AK M

AK = Specific Device Code
M = Month Code

ORDERING INFORMATION

Device	Package	Shipping†
NSR0530HT1G	SOD−323 (Pb−Free)	3000/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.

MAXIMUM RATINGS

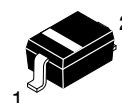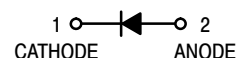| Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	V
Forward Current (DC)	I_F	500	mA
Forward Surge Current (60 Hz @ 1 cycle)	I_{FSM}	2.5	A
ESD Rating: Human Body Model Machine Model	ESD	Class 3B Class C	

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.

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			740 160	°C/W mW
Thermal Resistance Junction–to–Ambient (Note 2) Total Power Dissipation @ T_A = 25°C	$R_{\theta JA}$ P_D			460 270	°C/W mW
Junction and Storage Temperature Range	T_J, T_{stg}			−55 to +150	°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
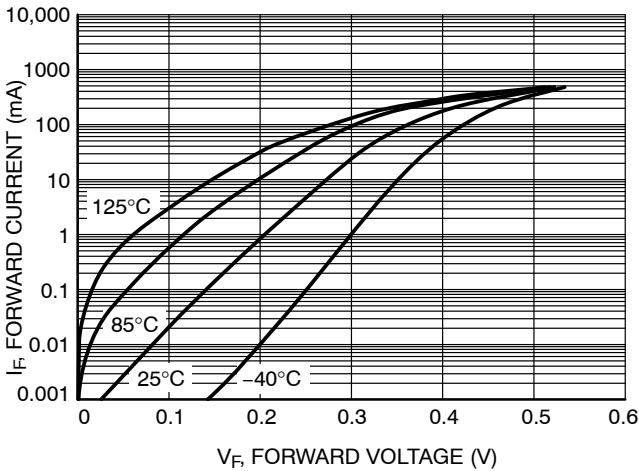
Figure 1. Forward Voltage
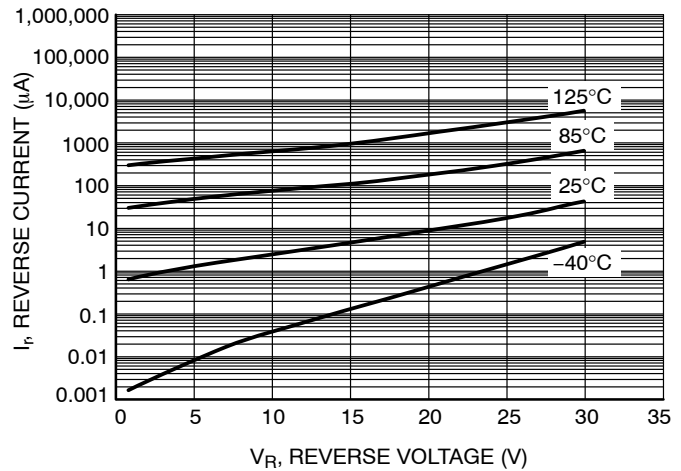
Figure 2. Leakage Current
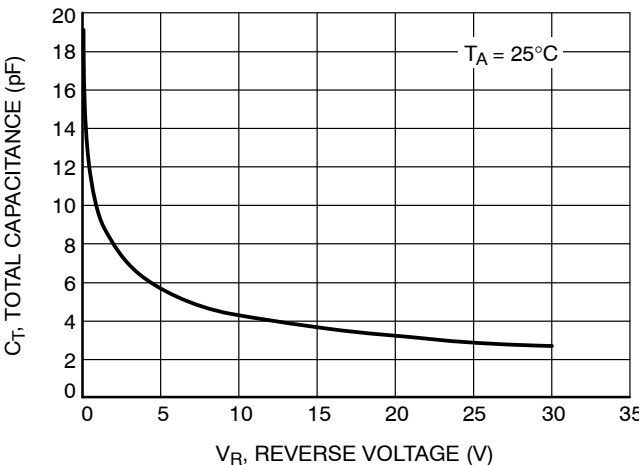
Figure 3. Total Capacitance
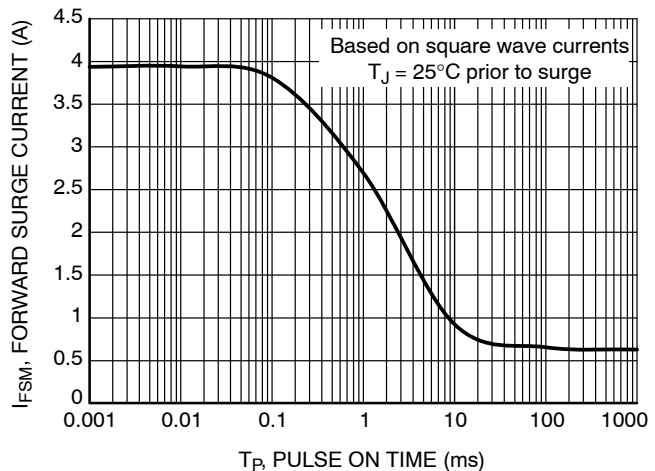
Figure 4. Forward Surge Current

SOD–323
CASE 477–02
ISSUE H

DATE 13 MAR 2007

STYLE 1   STYLE 2

SCALE 4:1

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
H$_E$	2.30	2.50	2.70	0.090	0.098	0.105

C
NOTE 3

L
NOTE 5

A1

SOLDERING FOOTPRINT*

$\frac{0.63}{0.025}$

$\frac{0.83}{0.033}$

$\frac{1.60}{0.063}$

$\frac{2.85}{0.112}$

*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*

XX M   XX M

STYLE 1   STYLE 2

XX = 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

DOCUMENT NUMBER:	98ASB17533C		
DESCRIPTION:	SOD–323		PAGE 1 OF 1

PUBLICATION ORDERING INFORMATION

◊

Mouser Electronics

Authorized Distributor

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   [NSR0530HT1G](#)