OM SENI

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. NSR0170H in a SOD−323 small footprint package enables designers to meet the challenging task of achieving higher efficiency designs and meeting reduced board space requirements.

Features

- Very Low Forward Voltage Drop − 560 mV @ 10 mA
- Low Reverse Current − 25 nA @ 50 V V_R
- 70 mA of Continuous Forward Current
- Power Dissipation of 180 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

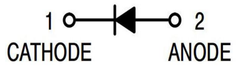
- Automotive Modules
- Buck and Boost dc−dc Converters
- Reverse Voltage and Current Protection
- Clamping & Protection

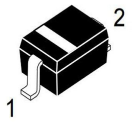
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	70	V
Forward Current (DC)	I_F	70	mA
Non−Repetitive Peak Surge Forward Current	I_{FSM}	100	mA
ESD Rating: Human Body Model Machine Model	ESD	Class 2 Class M3	

NSR0170HT1G

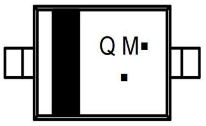
70 V SCHOTTKY BARRIER DIODE





SOD−323
CASE 477

MARKING DIAGRAM



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

ORDERING INFORMATION

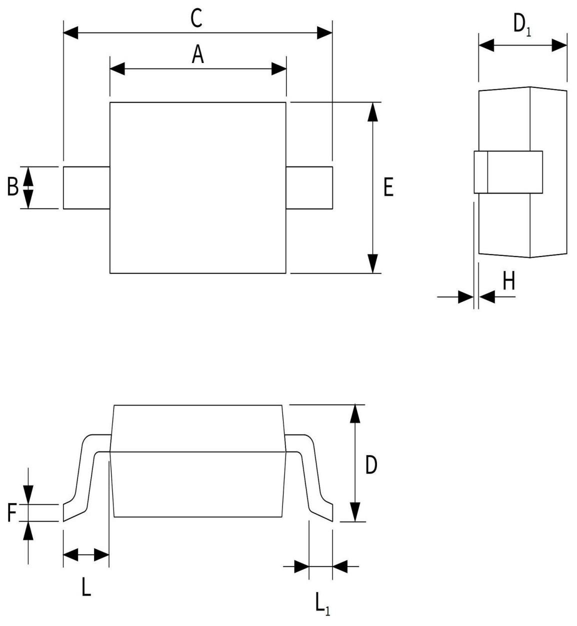
Device	Package	Shipping†
NSR0170HT1G	SOD−323 (Pb−Free)	3000 / Tape & Reel

†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.

Ordering Information

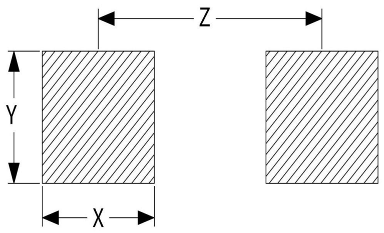
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-323	R1	0.0048	3000	30000	240000	7''

Package Outline Dimensions (SOD-323)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.80	0.063	0.071
B	0.25	0.40	0.010	0.016
C	2.30	2.80	0.091	0.110
D	0.80	1.10	0.031	0.043
D_1	0.80	0.90	0.031	0.035
E	1.20	1.40	0.047	0.055
F	0.08	0.18	0.003	0.007
L	0.475REF		0.019REF	
L_1	0.25	0.40	0.010	0.016
H	-	0.14	-	0.006

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
X	0.65	0.75	0.026	0.030
Y	0.65	0.75	0.026	0.030
Z	2.10	2.20	0.084	0.088

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			680 180	°C/W mW
Thermal Resistance Junction−to−Ambient (Note 2) Total Power Dissipation @ T_A = 25°C	$R_{\theta JA}$ P_D			440 280	°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	I_R				
(V_R = 50 V)			25	90	nA
(V_R = 70 V)			−	3.0	µA
Forward Voltage	V_F				mV
(I_F = 1.0 mA)			340	390	
(I_F = 10 mA)			560	640	
(I_F = 15 mA)			650	730	
Total Capacitance (V_R = 0 V, f = 1 MHz)	CT		2.0		pF

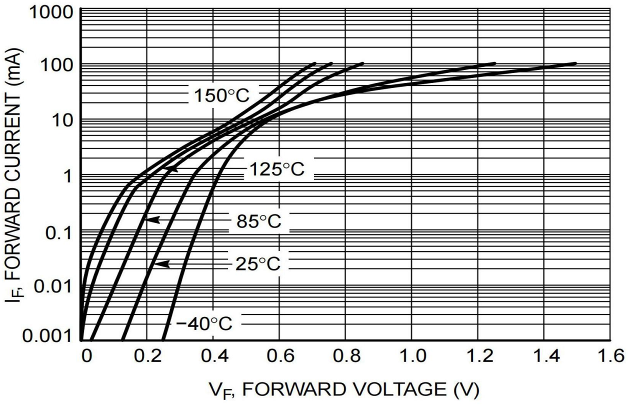


Figure 1. Forward Voltage

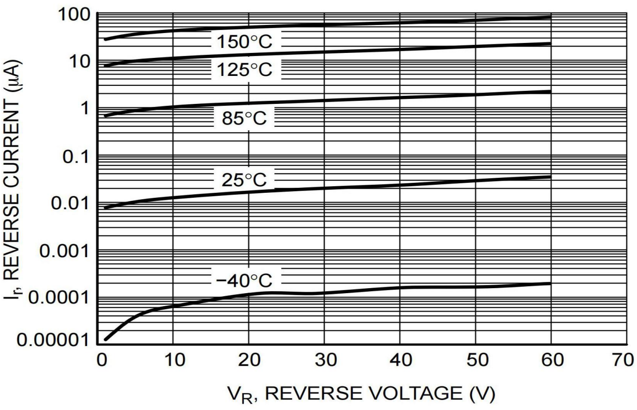


Figure 2. Leakage Current

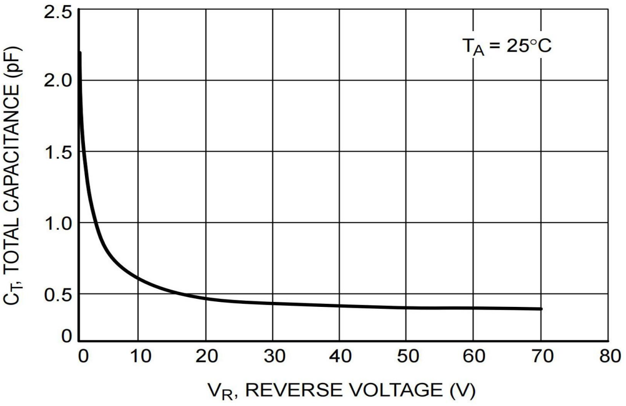


Figure 3. Total Capacitance