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NSR1020MW2T1G
Schottky Barrier Diodes

This Schottky Barrier Diode in the SOD−323 package offers extremely low Vf performance. The low forward voltage makes them capable of handling high current in a very small package. The resulting device is ideally suited for application as a blocking diode in charging applications or as part of discrete buck converter or discrete boost converter. As part of a buck conversion circuit, a boost conversion circuit or a charging circuit the low Vf drop of the Schottky improves the efficiency of the overall device by consuming less power in the forward mode.

Features

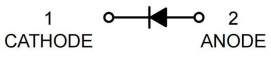
- Low Forward Voltage − 0.24 Volts (Typ) @ I_F = 10 mAdc
- High Current Capability
- ESD Rating − Human Body Model: CLASS 3B
  − Machine Model: C

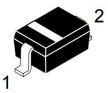
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS (T_J = 125°C unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	20	Vdc
Peak Revese Voltage	V_{RM}	30	V
Forward Power Dissipation @ T_A = 25°C Derate above 25°C	P_F	 200 2.0	 mW mW/°C
Forward Current (DC) Continuous	I_F	 1	A
Forward Current t = 8.3 ms Half Sinewave	I_F	 5	A
Repetitive Forward Current period = 1.5 s, Duty Cycle = 66.7%	I_{FRM}	 2	A
Junction Temperature	T_J	125 Max	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

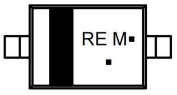
HIGH CURRENT
SCHOTTKY BARRIER DIODE





SOD−323
CASE 477
STYLE 1

MARKING DIAGRAM



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

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

Characteristic	Symbol	Min	Typ	Max	Unit
Total Capacitance (V_R = 5.0 V, f = 1.0 MHz)	C_T	–	25	29	pF
Reverse Leakage (V_R = 15 V)	I_R	–	–	40	μAdc
Forward Voltage (I_F = 1 mAdc)	V_F	–	–	0.20	Vdc
Forward Voltage (I_F = 10 mAdc)	V_F	–	–	0.26	Vdc
Forward Voltage (I_F = 100 mAdc)	V_F	–	–	0.33	Vdc
Forward Voltage (I_F = 500 mAdc)	V_F	–	–	0.44	Vdc
Forward Voltage (I_F = 1000 mAdc)	V_F	–	–	0.54	Vdc

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.

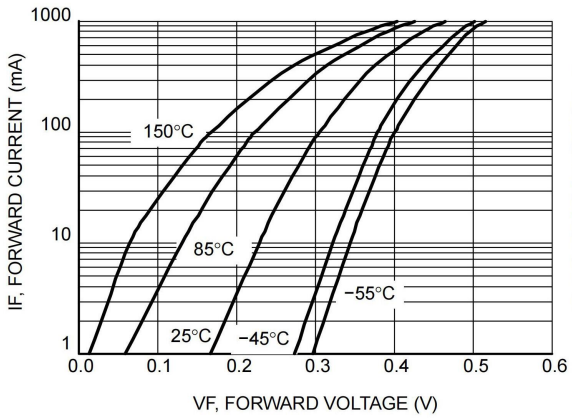

Figure 1. Forward Voltage

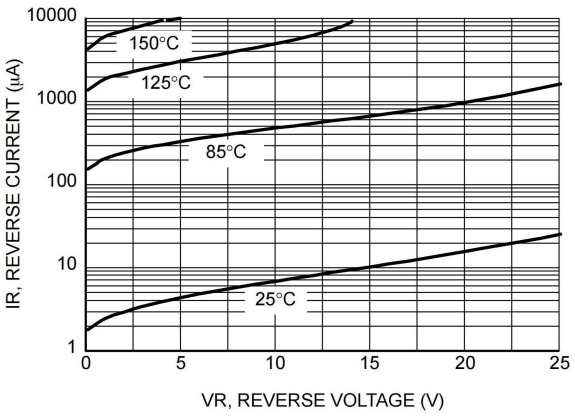

Figure 2. Leakage Current

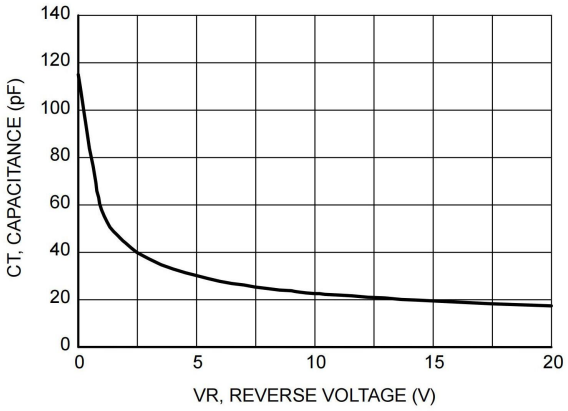

Figure 3. Total Capacitance

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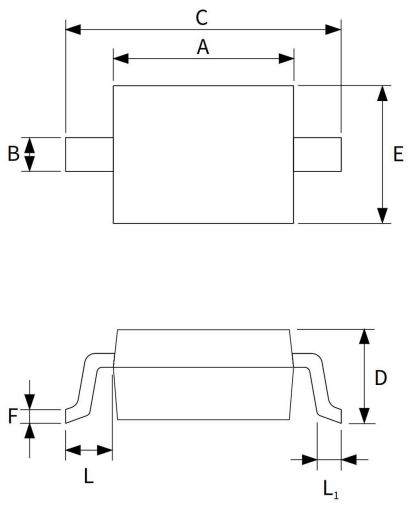
Ordering Information

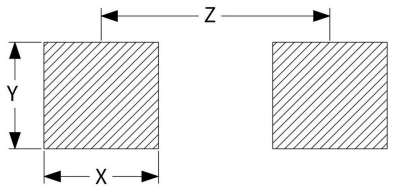
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-323	R1	0.0048	3000	30000	240000	7''

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