SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Low Capacitance
- Ultra-small Surface Mount Package
- **Lead Free/RoHS Compliant Version (Note 1)**
- **"Green" Device (Note 2)**

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Cathode Band
- Leads: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.004 grams (approximate)

Top View

Ordering Information (Note 3)

Part Number	Case	Packaging
SD101AWS-7-F	SOD323	3000/Tape & Reel
SD101BWS-7-F	SOD323	3000/Tape & Reel
SD101CWS-7-F	SOD323	3000/Tape & Reel

Notes: 1. No purposefully added lead.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/
3. For packaging details, go to our website at http://www.diodes.com.

Marking Information

xx = Product Type Marking Code
S1 or SK = SD101AWS
S2 or SK = SD101BWS
S3 or SC or SK = SD101CWS

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	SD101AWS	SD101BWS	SD101CWS	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	60	50	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	42	35	28	V
Forward Continuous Current (Note 4)	I_{FM}	15			mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 1.0s @ t = 10μs	I_{FSM}	50 2.0			mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P_D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 4)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +125	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 5)	SD101AWS	$V_{(BR)R}$	60	—	—	V	I_R = 10μA
	SD101BWS		50	—	—		I_R = 10μA
	SD101CWS		40	—	—		I_R = 10μA
Forward Voltage Drop	SD101AWS	V_{FM}	—	—	0.41	V	I_F = 1.0mA
	SD101BWS		—	—	0.40		I_F = 1.0mA
	SD101CWS		—	—	0.39		I_F = 1.0mA
	SD101AWS		—	—	1.00		I_F = 15mA
	SD101BWS		—	—	0.95		I_F = 15mA
	SD101CWS		—	—	0.90		I_F = 15mA
Peak Reverse Current (Note 5)	SD101AWS	I_{RM}	—	—	200	nA	V_R = 50V
	SD101BWS		—	—	200		V_R = 40V
	SD101CWS		—	—	200		V_R = 30V
Total Capacitance	SD101AWS	C_T	—	—	2.0	pF	V_R = 0V, f = 1.0MHz
	SD101BWS		—	—	2.1		V_R = 0V, f = 1.0MHz
	SD101CWS		—	—	2.2		V_R = 0V, f = 1.0MHz
Reverse Recovery Time		t_{rr}	—	—	1.0	ns	I_F = I_R = 5.0mA, I_{rr} = 0.1 x I_R, R_L = 100Ω

Notes: 4. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com.
5. Short duration pulse test used to minimize self-heating effect.

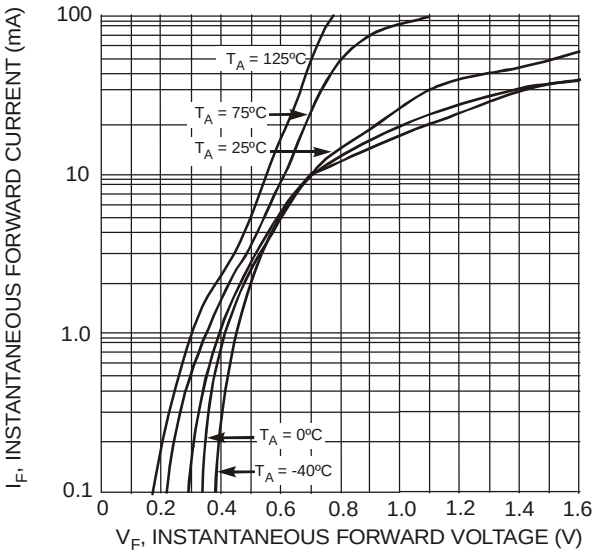


Fig. 1 Typical Forward Characteristics

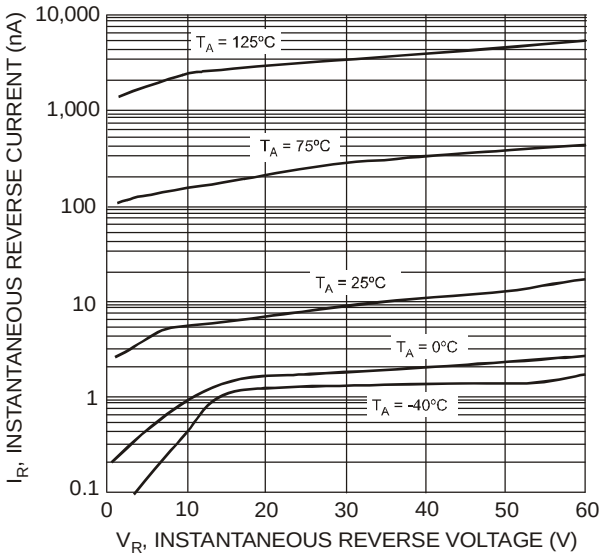


Fig. 2 Typical Reverse Characteristics

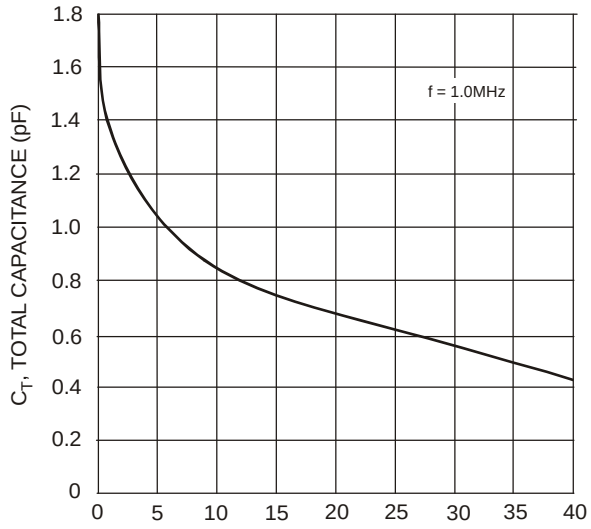


Fig. 3 Total Capacitance vs. Reverse Voltage

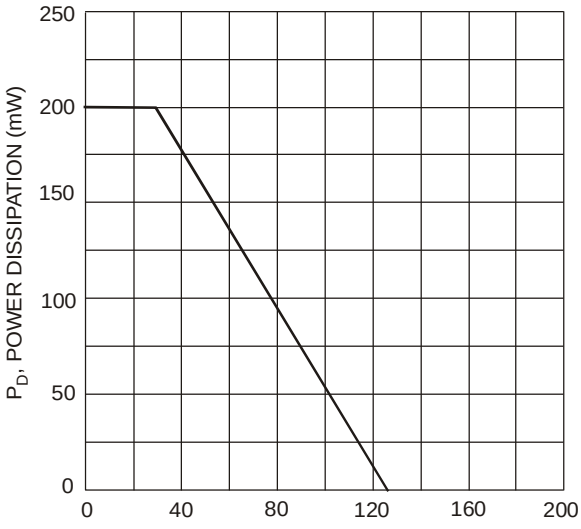
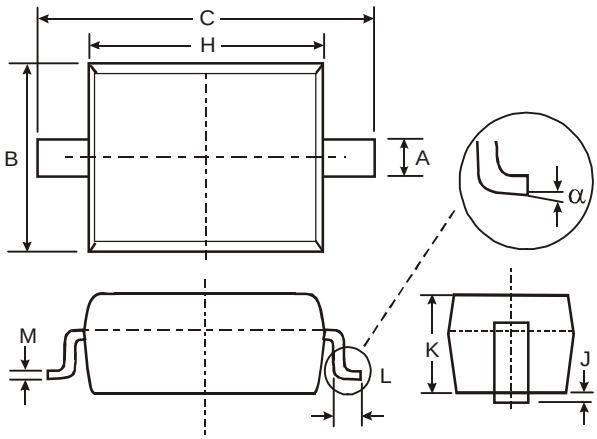


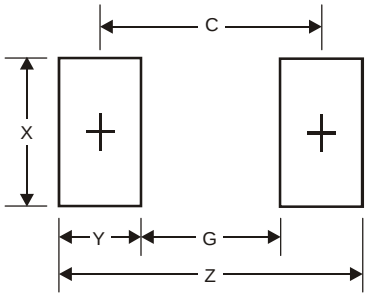
Fig. 4 Power Derating Curve

Package Outline Dimensions



SOD323		
Dim	**Min**	**Max**
A	0.25	0.35
B	1.20	1.40
C	2.30	2.70
H	1.60	1.80
J	0.00	0.10
K	1.0	1.1
L	0.20	0.40
M	0.10	0.15
α	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40