SD101AW - SD101CW

SCHOTTKY BARRIER SWITCHING DIODE

Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Very Low Reverse Capacitance
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2 and 3)**

Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)

Top View

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	SD101AW	SD101BW	SD101CW	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 1)	I_{FM}	15			mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 1.0s @ t = 10μs	I_{FSM}	50 2.0			mA A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P_D	400	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	300	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +125	°C

Notes:
1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. No purposefully added lead. Halogen and Antimony Free.
3. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 Fire Retardants.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 4)	SD101AW SD101BW SD101CW	$V_{(BR)R}$	60 50 40	—	V	I_R = 10μA I_R = 10μA I_R = 10μA
Forward Voltage Drop	SD101AW SD101BW SD101CW SD101AW SD101BW SD101CW	V_{FM}	—	0.41 0.40 0.39 1.00 0.95 0.90	V	I_F = 1.0mA I_F = 1.0mA I_F = 1.0mA I_F = 15mA I_F = 15mA I_F = 15mA
Peak Reverse Current (Note 4)	SD101AW SD101BW SD101CW	I_{RM}	—	200	nA	V_R = 50V V_R = 40V V_R = 30V
Total Capacitance	SD101AW SD101BW SD101CW	C_T	—	2.0 2.1 2.2	pF	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. Short duration pulse test used to minimize self-heating effect.

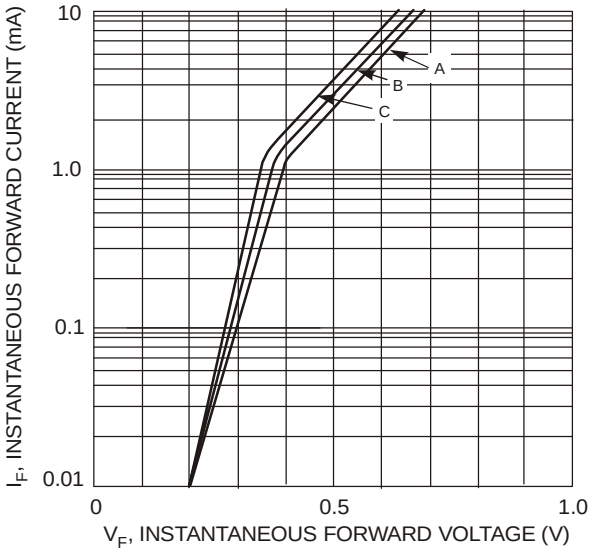


Fig. 1 Typical Forward Characteristics

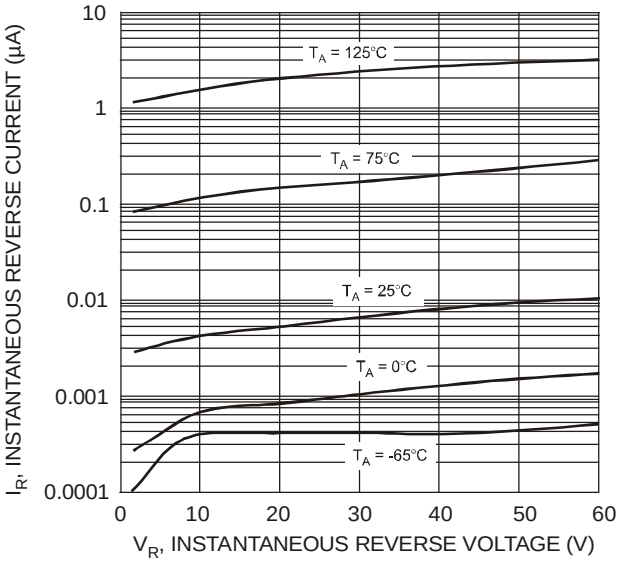


Fig. 2 Typical Reverse Characteristics

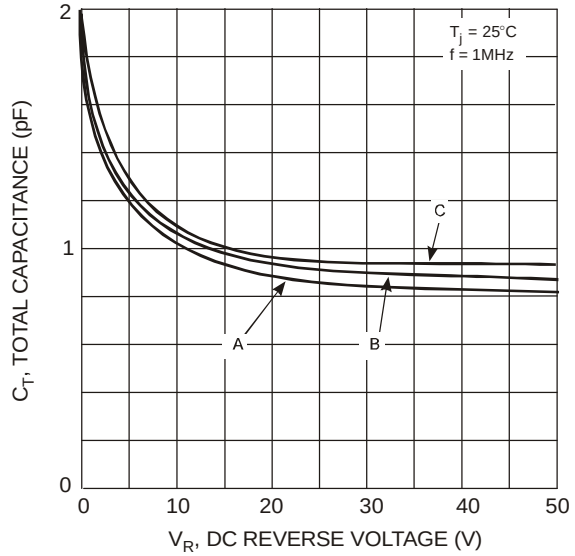


Fig. 3 Total Capacitance vs Reverse Voltage

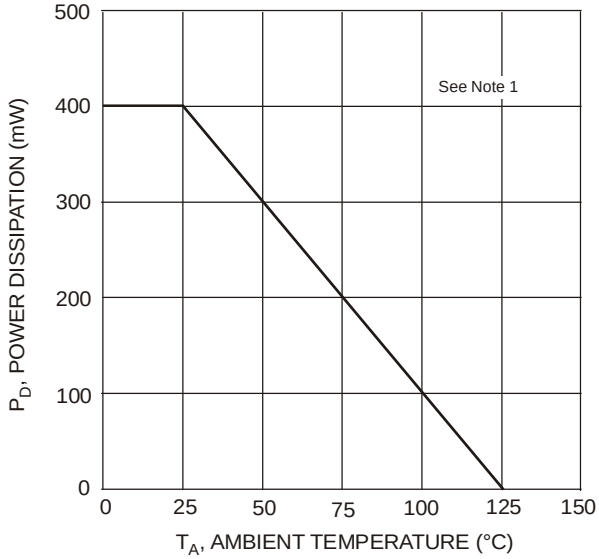


Fig. 4 Power Derating Curve

Ordering Information (Note 5)

Part Number	Case	Packaging
SD101xW-7-F	SOD-123	3000/Tape and Reel
SD101xW-13-F	SOD-123	10,000/Tape and Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information

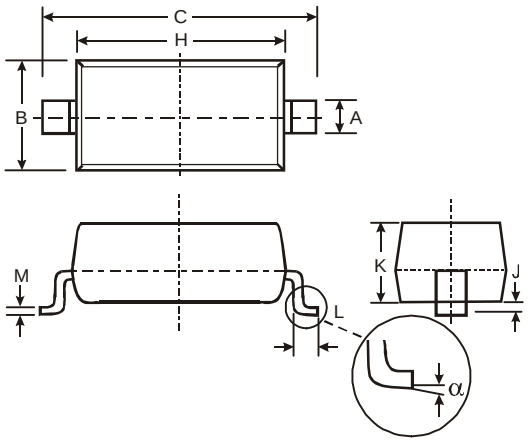
xx = Product Type Marking Code
S1 or SK = SD101AW
S2 or SK = SD101BW
S3 or SK = SD101CW
YM = Date Code Marking
Y = Year (ex: T = 2006)
M = Month (ex: 9 = September)

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z	A	B	C

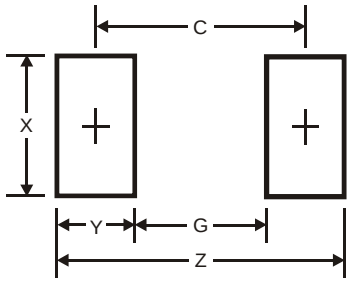
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SOD-123		
Dim	Min	Max
A	0.55 Typ	
B	1.40	1.70
C	3.55	3.85
H	2.55	2.85
J	0.00	0.10
K	1.00	1.35
L	0.25	0.40
M	0.10	0.15
α	0	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	4.9
G	2.5
X	0.7
Y	1.2
C	3.7