

## 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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	SD101AW	SD101BW	SD101CW	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$				
Working Peak Reverse Voltage	$V_{RWM}$	60	50	40	V
DC Blocking Voltage	$V_R$				
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	@ $t \leq 1.0\text{s}$		50		mA
	@ $t = 10\mu\text{s}$		2.0		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	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +125	$^\circ\text{C}$

- 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  $\text{Sb}_2\text{O}_3$  Fire Retardants.

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic		Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 4)	SD101AW SD101BW SD101CW	V <sub>(BR)R</sub>	60 50 40	—	V	I <sub>R</sub> = 10μA I <sub>R</sub> = 10μA I <sub>R</sub> = 10μA
Forward Voltage Drop	SD101AW SD101BW SD101CW SD101AW SD101BW SD101CW	V <sub>FM</sub>	—	0.41 0.40 0.39 1.00 0.95 0.90	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 1.0mA I <sub>F</sub> = 1.0mA I <sub>F</sub> = 15mA I <sub>F</sub> = 15mA I <sub>F</sub> = 15mA
Peak Reverse Current (Note 4)	SD101AW SD101BW SD101CW	I <sub>RM</sub>	—	200	nA	V <sub>R</sub> = 50V V <sub>R</sub> = 40V V <sub>R</sub> = 30V
Total Capacitance	SD101AW SD101BW SD101CW	C <sub>T</sub>	—	2.0 2.1 2.2	pF	V <sub>R</sub> = 0V, f = 1.0MHz
Reverse Recovery Time		t <sub>rr</sub>	—	1.0	ns	I <sub>F</sub> = I <sub>R</sub> = 5.0mA, I <sub>tr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

Notes: 4. Short duration pulse test used to minimize self-heating effect.

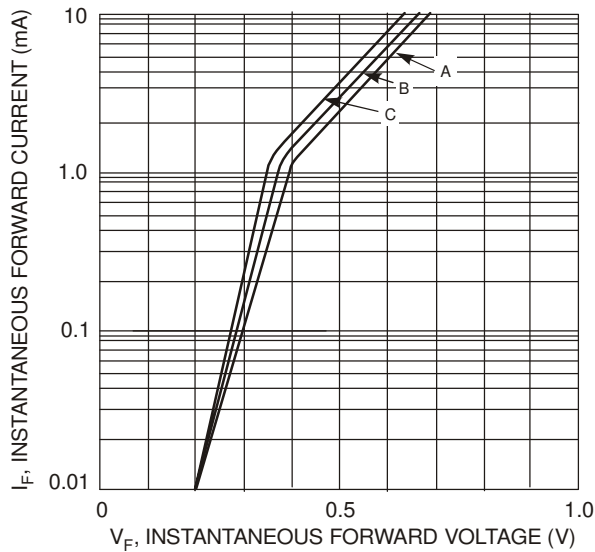


Fig. 1 Typical Forward Characteristics

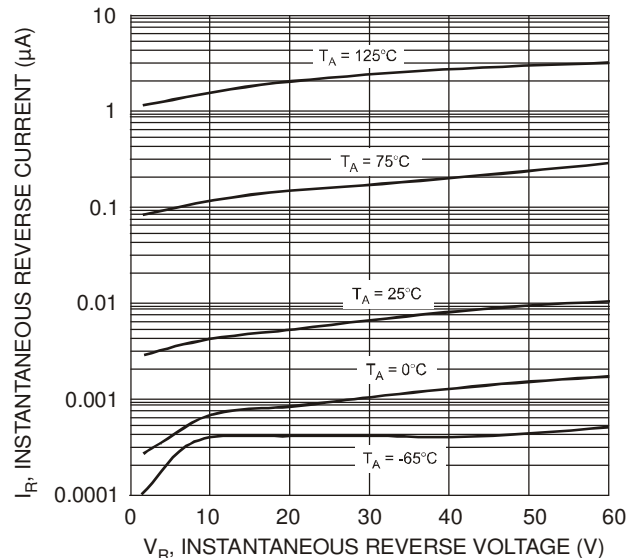


Fig. 2 Typical Reverse Characteristics

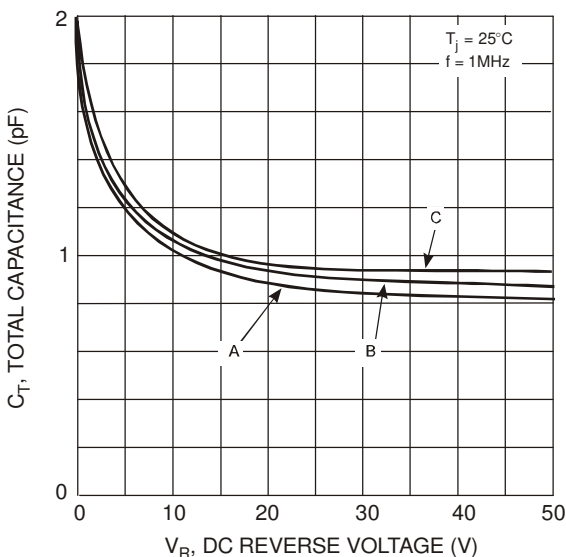


Fig. 3 Total Capacitance vs Reverse Voltage

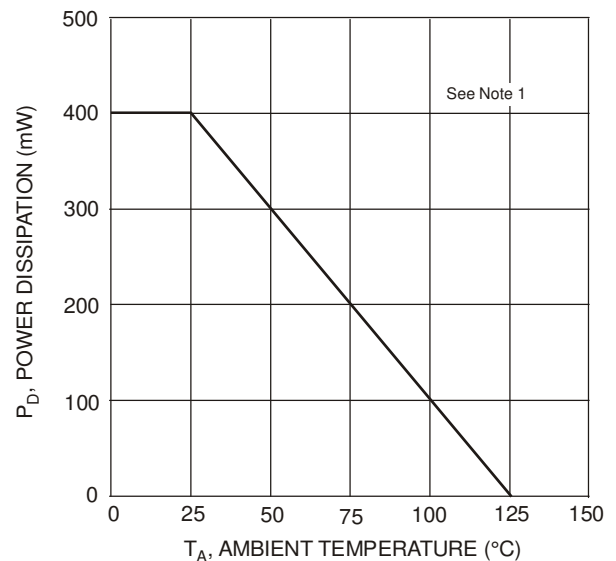


Fig. 4 Power Derating Curve

### 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)

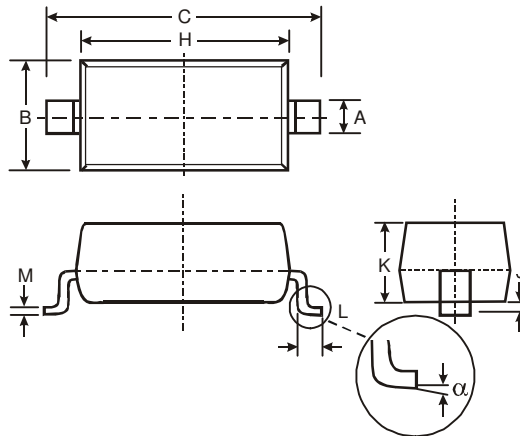
#### Date Code Key

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

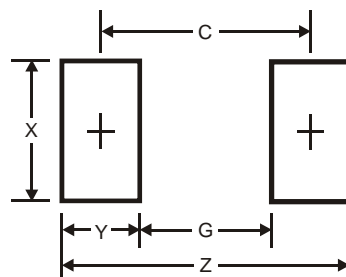
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

### 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
$\alpha$	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

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