

#### **Features**

- Low Leakage Current: ≤ 100nA
- Fast Switching Speed: ≤ 50ns
- High Reverse Breakdown Voltage: ≥ 350V
- Ideal for Battery Powered Portable Applications or Automated
  Insertion
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Notes 3 & 4)
- Qualified to AEC-Q101 Standards for High Reliability

#### **Mechanical Data**

- Case: SOD123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208; Lead Free plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Weight: 0.01 grams (approximate)

SOD123



Ordering Information (Note 5)

Part Number	Case	Packaging
BAV3004W-7-F	SOD123	3,000/Tape & Reel
BAV3004WQ-7-F	SOD123	3,000/Tape & Reel

Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

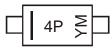
2. See http://www.diodes.com for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. Product manufactured with Date 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<sub>2</sub>O<sub>3</sub> Fire Retardants.

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

## **Marking Information**



4P = Product Type Marking Code YM = Date Code Marking Y = Year (ex: Z = 2012) M = Month (ex: 9 = September)

Date	Code	Key
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Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	Ν	Р	R	S	Т	U	V	W	Х	Y	Z	А	В	С	D	E
Month	Jan	F	eb	Mar	Apr	M	ay	Jun	Jul	A	ug	Sep	Oct	N	vo	Dec
Code	1		2	3	4		5	6	7	8	3	9	0	1	7	D



# **Maximum Ratings** $@T_A = 25^{\circ}C$ unless otherwise specified

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage		V <sub>RRM</sub>	350	V
Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RWM</sub> V <sub>R</sub>	300	V
RMS Reverse Voltage		V <sub>R(RMS)</sub>	212	V
Forward Continuous Current		I <sub>FM</sub>	225	mA
Repetitive Peak Forward Current		I <sub>FRM</sub>	625	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0s	I <sub>FSM</sub>	4.0 1.0	А

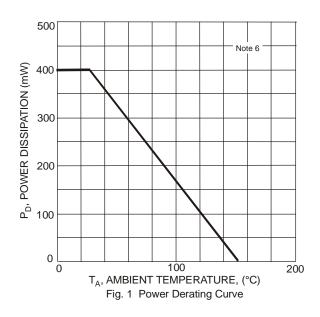
### **Thermal Characteristics**

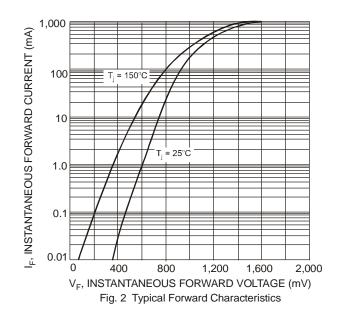
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	PD	400	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	312	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V <sub>(BR)R</sub>	350	_	_	V	I <sub>R</sub> = 150μA
Forward Voltage	V <sub>FM</sub>	_	0.78 0.93 1.03	0.87 1.0 1.25	V	I <sub>F</sub> = 20mA I <sub>F</sub> = 100mA I <sub>F</sub> = 200mA
Leakage Current (Note 7)	I <sub>RM</sub>	_	30 35	100 100	nA μA	$V_R = 240V, T_J = 25^{\circ}C$ $V_R = 240V, T_J = 150^{\circ}C$
Total Capacitance	CT	_	1.0	5.0	pF	$V_{R} = 0, f = 1.0MHz$
Reverse Recovery Time	t <sub>rr</sub>		_	50	ns	$I_F = I_R = 30 \text{mA},$ $I_{rr} = 3.0 \text{mA}, R_L = 100 \Omega$

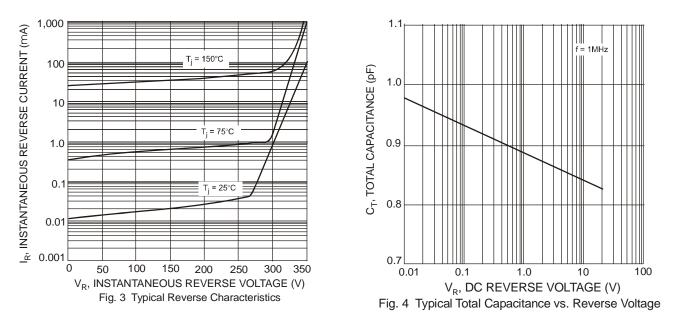
Notes: 6. Valid provided that terminals are kept at ambient room temperature. 7. Short duration pulse test used to minimize self-heating effect.



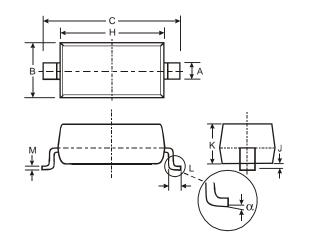


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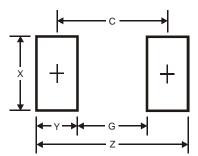


## Package Outline Dimensions



SOD123							
Dim	Min	Max					
Α	0.55 Typ						
В	1.40 1.70						
С	3.55 3.85						
Н	2.55 2.85						
J	0.00	0.10					
κ	1.00 1.35						
L	0.25 0.40						
М	0.10 0.15						
α	0	8°					
All Di	mensions	s in mm					

# Suggested Pad Layout



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



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  - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
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