



BAV3004W

May 2012

SURFACE MOUNT HIGH VOLTAGE LOW LEAKAGE DIODE

Features

- Low Leakage Current: ≤ 100nA
- Fast Switching Speed: ≤ 50ns
- High Reverse Breakdown Voltage: ≥ 350V
- Ideal for Battery Powered Portable Applications or Automated
- 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



Top View

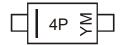
Ordering Information (Note 5)

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 Sb₂O₃ 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

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	N	Р	R	S	Т	U	V	W	Х	Υ	Z	Α	В	С	D	Е
Month	Jan	F	eb	Mar	Apr	M	ay	Jun	Jul	Α	ug	Sep	Oct	N	ov	Dec
Code	4		_	_			-	_	-		•	_	_			



Maximum Ratings @TA = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage		V_{RRM}	350	V
Working Peak Reverse Voltage DC Blocking Voltage		V _{RWM} V _R	300	V
RMS Reverse Voltage		V _{R(RMS)}	212	V
Forward Continuous Current		I _{FM}	225	mA
Repetitive Peak Forward Current		I _{FRM}	625	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0s	I _{FSM}	4.0 1.0	A

Thermal Characteristics

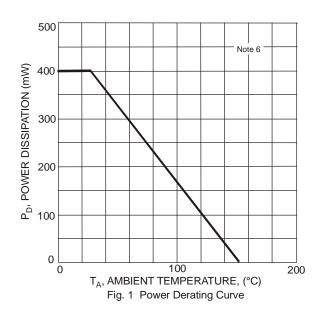
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_{D}	400	mW
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{ hetaJA}$	312	°C/W
Operating and Storage Temperature Range	T_J, T_STG	-65 to +150	°C

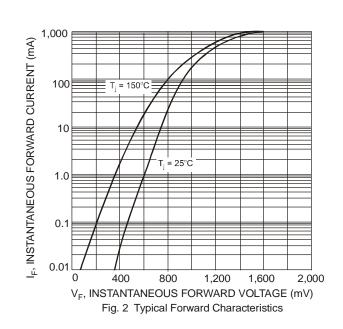
Electrical Characteristics @T_A = 25°C unless otherwise specified

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

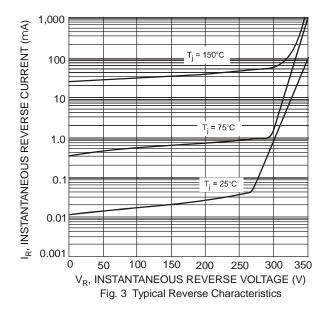
Notes:

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









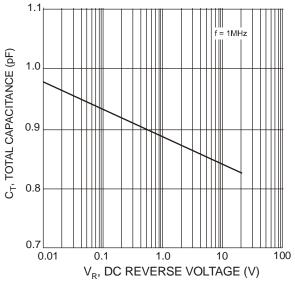
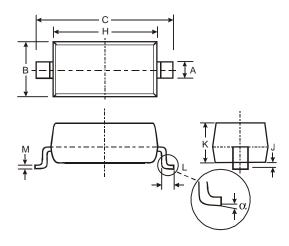


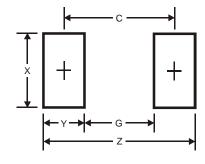
Fig. 4 Typical Total Capacitance vs. Reverse Voltage

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					
K	1.00	1.35					
L	0.25	0.40					
М	0.10	0.15					
α	0	8°					
All Dimensions in mm							

Suggested Pad Layout



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



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