


Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- High Conductance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band, See Page 2
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe
(Lead Free Plating). Solderable per MIL-STD-202, Method 208 
- Weight: 0.004 grams (approximate)

SOD323



Top View

Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
BAV19WS-7-F	Commercial	SOD323	3000/Tape & Reel
BAV20WS-7-F	Commercial	SOD323	3000/Tape & Reel
BAV21WS-7-F	Commercial	SOD323	3000/Tape & Reel
BAV21WSQ-7-F	Automotive	SOD323	3000/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/quality/lead_free.html 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



XX = Product Type Marking Code
BAV19WS Marking: T2 or T3
BAV20WS Marking: T2 or T3
BAV21WS Marking: T3

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	BAV19WS	BAV20WS	BAV21WS	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	120	200	250	V
Working Peak Reverse Voltage DC Blocking Voltage	V _{RWM} V _R	100	150	200	V
RMS Reverse Voltage	V _{R(RMS)}	71	106	141	V
Forward Continuous Current (Note 5)	I _{FM}	250			mA
Average Rectified Output Current (Note 5)	I _O	200			mA
Non-Repetitive Peak Forward Surge Current @t = 1.0µs @t = 100µs @t = 10ms	I _{FSM}	9.0 3.0 1.7			A
Repetitive Peak Forward Surge Current	I _{FRM}	625			mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R _{θJA}	625	°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	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6) BAV19WS BAV20WS BAV21WS	V _{(BR)R}	120 200 250	—	V	I _R = 100µA
Forward Voltage	V _F	—	1.0 1.25	V	I _F = 100mA I _F = 200mA
Peak Reverse Current @ Rated DC Blocking Voltage (Note 6)	I _R	—	100 15	nA µA	T _J = +25°C T _J = +100°C
Total Capacitance	C _T	—	5.0	pF	V _R = 0, f = 1.0MHz
Reverse Recovery Time	t _{rr}	—	50	ns	I _F = I _R = 30mA, I _{rr} = 0.1 x I _R , R _L = 100Ω

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
6. Short duration pulse test used to minimize self-heating effect.

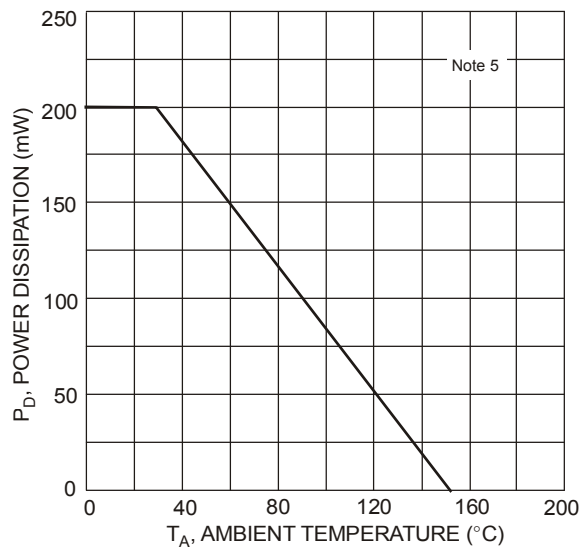


Fig. 1 Power Derating Curve

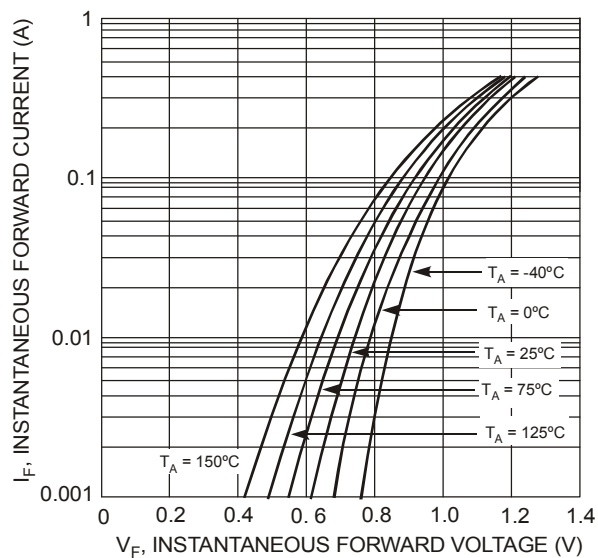


Fig. 2 Typical Forward Characteristics

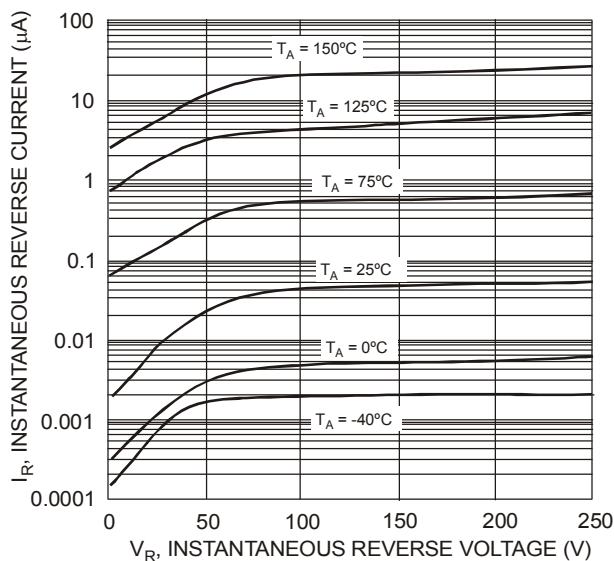


Fig. 3 Typical Reverse Characteristics

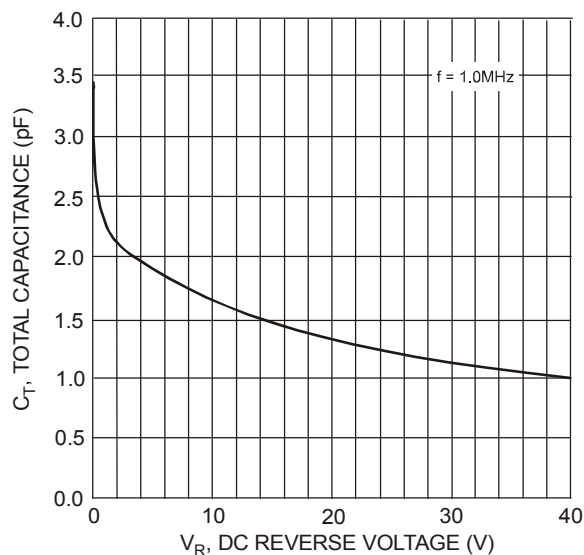


Fig. 4 Total Capacitance vs. Reverse Voltage

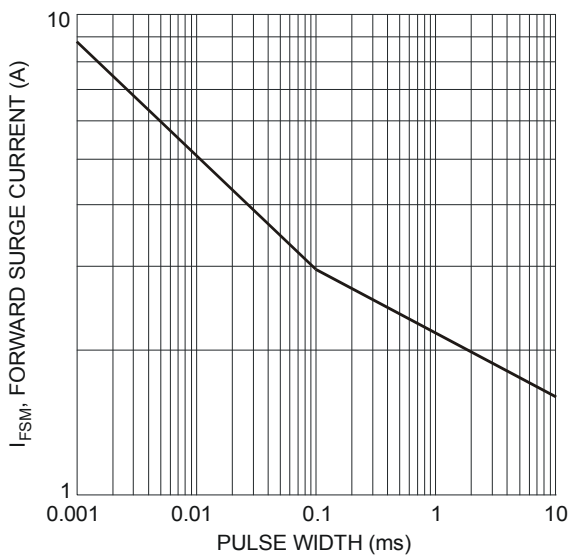
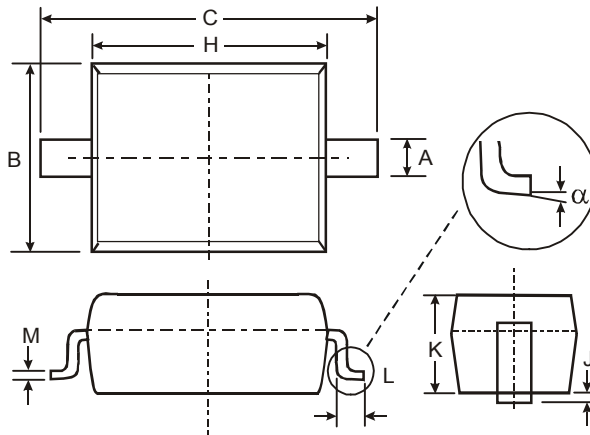


Fig. 5 Maximum Non-Repetitive Surge Current

Package Outline Dimensions

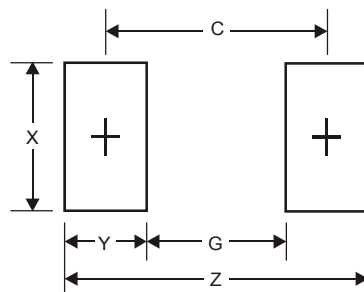
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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

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