



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Features

- Fast Switching Speed: max. 50 ns
- High Reverse Breakdown Voltage: 300V
- Low Leakage Current: 100nA at room temperature
- Ultra Small Plastic SMD Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe.
- Solderable per MIL-STD-202, Method 208
- Weight: 0.0014 grams (approximate)

SOD523



Top View



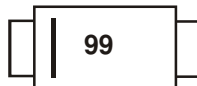
Device Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging (Note 5)
BAS521-7	SOD523	3000/Tape & Reel
BAS521-13	SOD523	10000/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. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
 5. Dispensed in every other cavity of the tape.

Marking Information



99 = Product Type Marking Code
Bar Denotes Cathode Side

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	300	V
Working Peak Reverse Voltage	V_{RWM}	300	V
DC Blocking Voltage			
Forward Current (Note 6)	I_F	250	mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$	I_{FSM}	4.5	A
Repetitive Peak Forward Current (Note 6)	I_{FRM}	1	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	325	mW
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{\theta JA}$	385	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	300	—	V	$I_R = 100\mu\text{A}$
Forward Voltage	V_F	—	1.1	V	$I_F = 100\text{mA}$
Reverse Current (Note 7)	I_R	—	50	nA	$V_R = 5\text{V}$
		—	150	nA	$V_R = 250\text{V}$
		—	100	μA	$V_R = 250\text{V}, T_J = +150^\circ\text{C}$
Total Capacitance	C_T	—	5	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	t_{rr}	—	50	ns	$I_F = I_R = 30\text{mA}, I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

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

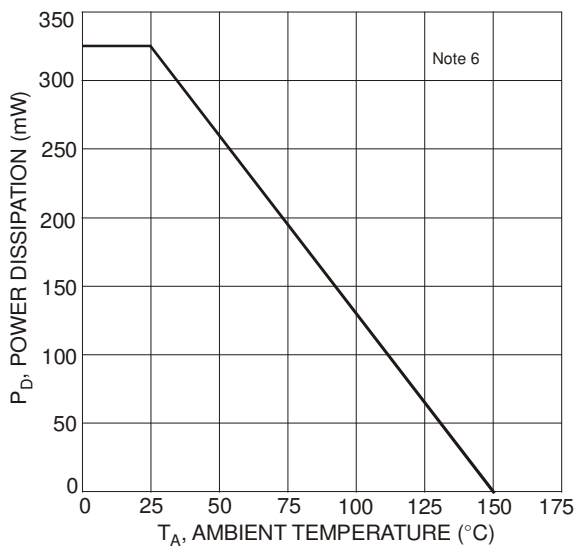


Fig. 1 Power Derating Curve, Total Package

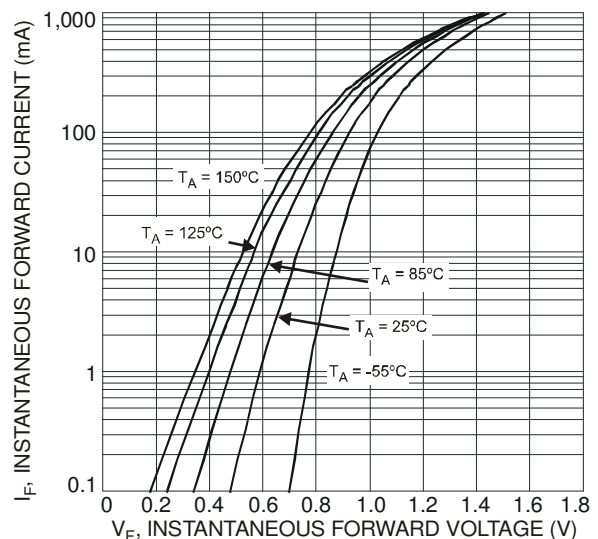
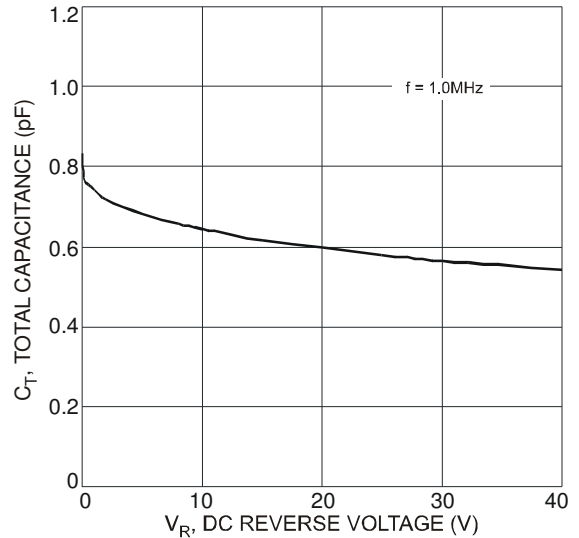
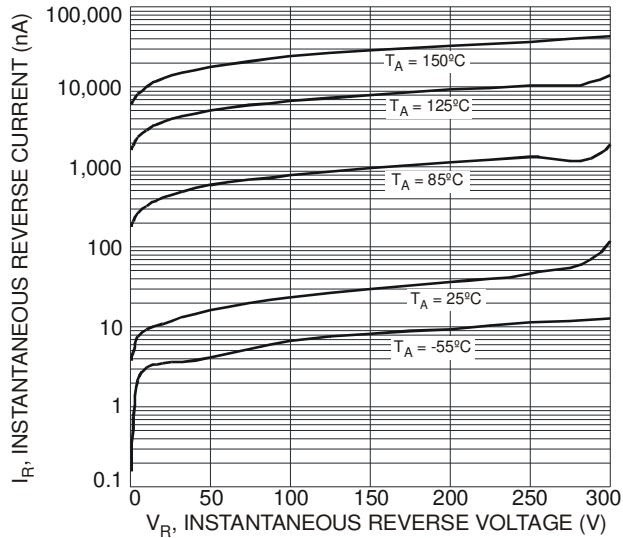
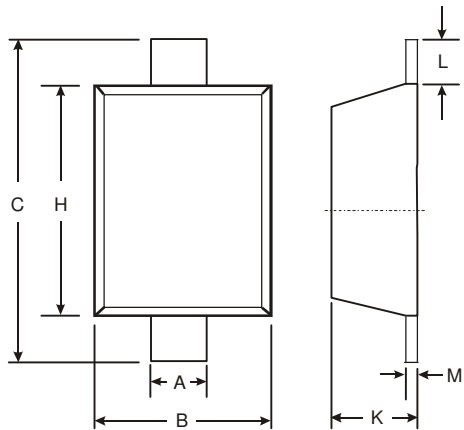


Fig. 2 Typical Forward Characteristics, Per Element



Package Outline Dimensions

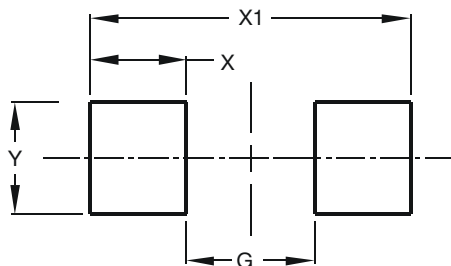
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOD523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
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)
G	0.80
X	0.60
X1	2.00
Y	0.70

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