Product Summary

V_R	I_R	t_{RR}
85V	5.0nA	3.0µs

Description and Applications

The BAV116S92 is a 85V, 5.0nA and 3.0µs switching diode that is optimized for low leakage current. It is ideally suited for use in applications such as the following:

- Mobile
- Portable Electronics
- Consumer Electronics

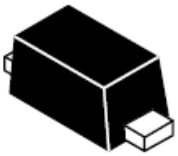
Features

- Ultra Low Leakage Current (5nA @ V_R = 75V)
- Ultra-small Surface Mount Package (1.0 x 0.6 x 0.37mm)
- Low Capacitance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Notes 3)**

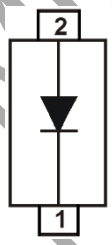
Mechanical Data

- Case: SOD923
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead-Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.001 grams (Approximate)

SOD923



Top View



Device Schematic

Ordering Information (Note 4)

Product	Compliance	Case	Packaging
BAV116S92-7	Standard	SOD923	10,000/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/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

SOD923

TW = Product Type Marking Code
Bar Denotes Cathode Side

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

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	85	V
RMS Reverse Voltage		$V_{R(RMS)}$	60	V
Forward Continuous Current (Note 5)		I_{FM}	215	mA
Repetitive Peak Forward Current		I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0µs @ t = 1.0ms @ t = 1.0s	I_{FSM}	4.0 1.0 0.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	85	—	—	V	I_R = 100µA
Forward Voltage	V_F	—	—	0.9 1.0 1.1 1.25	V	I_F = 1.0mA I_F = 10mA I_F = 50mA I_F = 150mA
Leakage Current (Note 6)	I_R	—	—	5.0 80	nA nA	V_R = 75V V_R = 75V, T_J = 150°C
Total Capacitance	C_T	—	1.5	—	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{RR}	—	—	3.0	µs	I_F = I_R = 10mA, 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.
6. Short duration pulse test used to minimize self-heating effect.

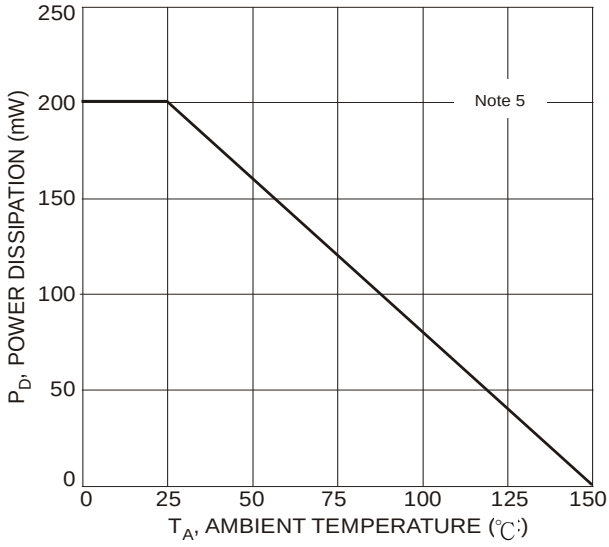


Fig.1 Power Derating Curve

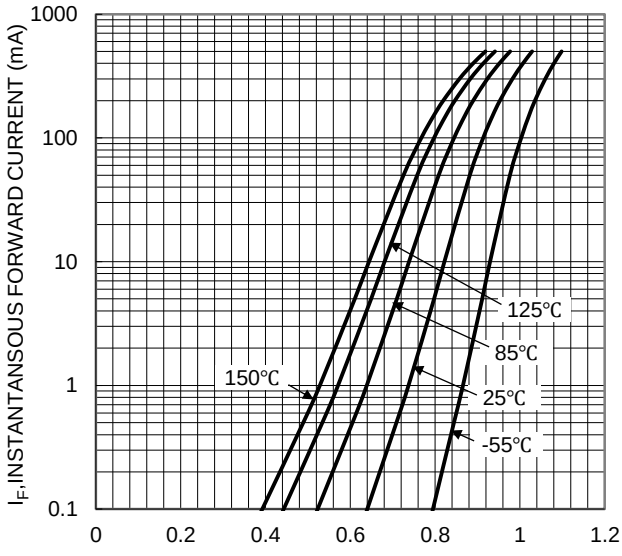


Fig.2 Typical Forward Characteristics

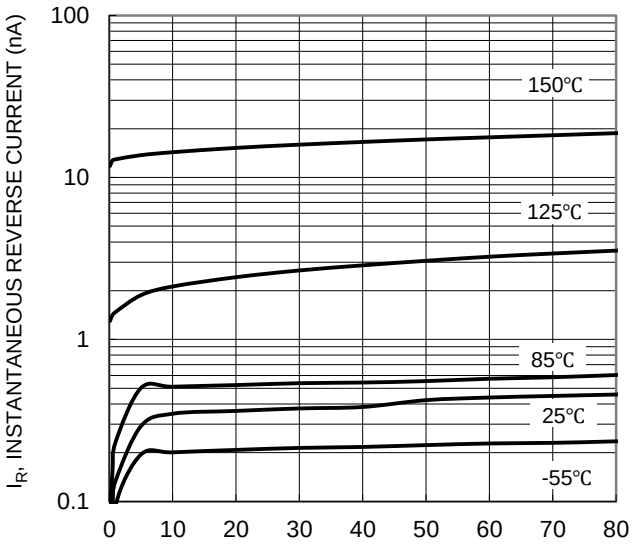


Fig.3 Typical Reverse Characteristics

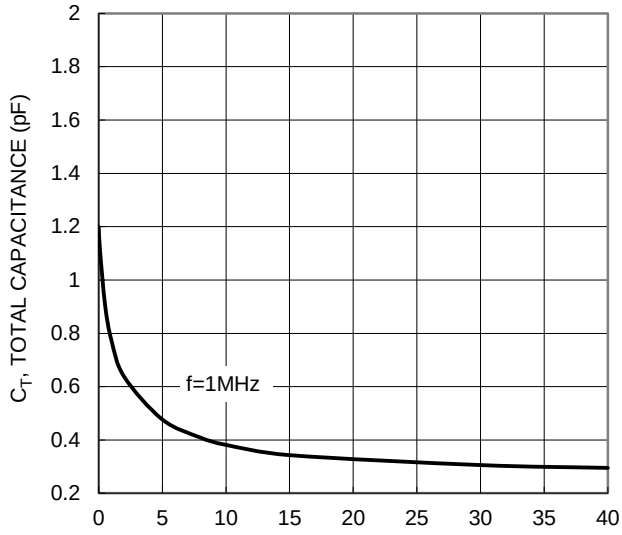
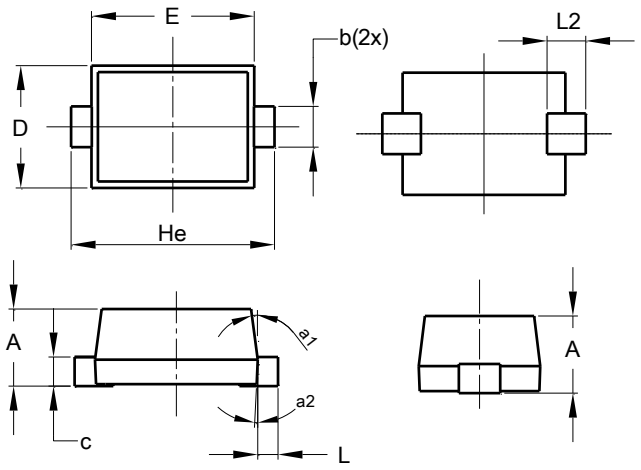


Fig. 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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

SOD923 (0.2mm Lead Width)

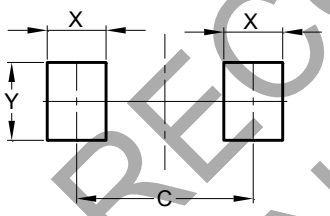


SOD923 (0.2mm Lead Width)			
Dim	**Min**	**Max**	**Typ**
A	0.34	0.40	0.37
b	0.15	0.25	0.20
c	0.070	0.170	0.120
D	0.55	0.65	0.60
E	0.75	0.85	0.80
He	0.95	1.05	1.00
L	0.05	0.15	0.10
L2	0.190 REF		
a1	0°	8°	7°
a2	2°	4°	3°
All Dimensions in mm			

Suggested Pad Layout

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

SOD923 (0.2mm Lead Width)



Dimensions	Value (in mm)
C	0.900
X	0.300
Y	0.400

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