

500mW Fast Switching Diode

BAV19W~21W



SOD-123 GW

SOD-123GW
Surface Mount
Plastic Package
RoHS compliant

FEATURES:

1. Fast Switching Device ($T_{RR} < 50\text{nS}$)
2. Power Dissipation of 500mW
3. High Stability and High Reliability
4. Low reverse leakage

Marking:

BAV19W: A8
BAV20W: T2
BAV21W: T3

ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C Unless otherwise specified)

PARAMETER	SYMBOL	VALUE			UNIT
		BAV19W	BAV20W	BAV21W	
Reverse Voltage	V_R	120	200	250	V
Peak Reverse Voltage	V_{RM}	100	150	250	V
Power Dissipation	P_d	500			mW
Operating junction temperature	T_j	150			°C
Storage temperature range	T_s	-65 to +150			°C
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250			°C/W
Working Inverse Voltage	WIV	75			V
Average Rectified Current	I_O	200			mA
Non-repetitive Peak Forward Current	I_{FM}	400			mA
Peak Forward Surge Current @ $t_p=1\text{ms}$; $T_A=25^\circ\text{C}$	I_{FSM}	2.5			A

Note:

1. Valid provided that electrodes are kept at ambient temperature.



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ELECTRICAL CHARACTERISTICS at (Ta = 25 °C Unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITION	VALUE			UNIT
				MIN	TYP	MAX	
Reverse Voltage	BAV19W	V_{RB}	$I_B=100\mu A$	120	--	--	V
	BAV20W			200	--	--	V
	BAV21W			250	--	--	V
Reverse Leakage Current	BAV19W	I_R	$V_R=100V$	--	--	0.1	μA
	BAV20W		$V_R=150V$	--	--		
	BAV21W		$V_R=200V$	--	--		
Forward Voltage		V_F	$I_F=100mA$	--	--	1.00	V
			$I_F=200mA$	--	--	1.25	V
Reverse Recovery Time		T_{RR}	$I_F=30mA, I_R=30mA$ $R_L=100\Omega$ $I_{RR}=3mA$	--	--	50	nS
Capacitance		C	$V_R=0V, f=1MHZ$	--	--	5	pF

TYPICAL CHARACTERISTICS CURVES

Fig 1: Forward Characteristics

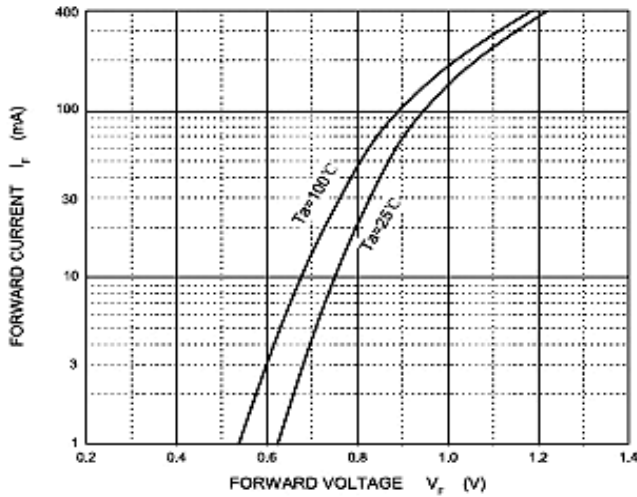


Fig 3: Reverse Characteristics

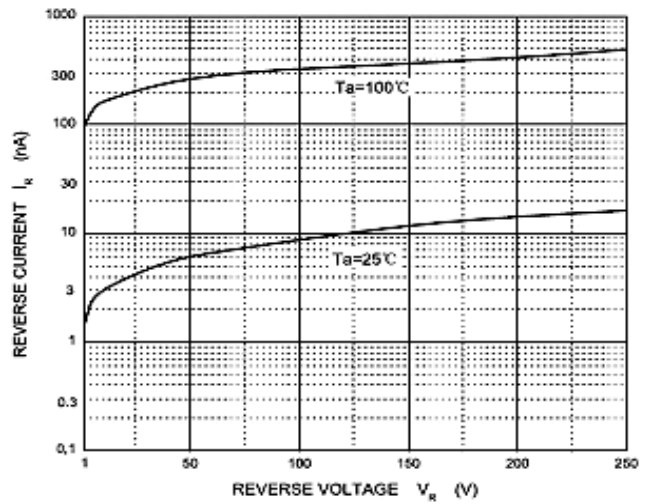


Fig 2: Capacitance Characteristics

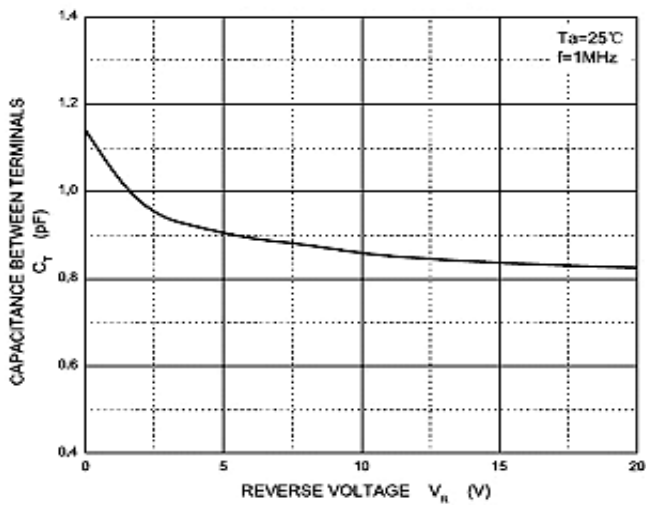
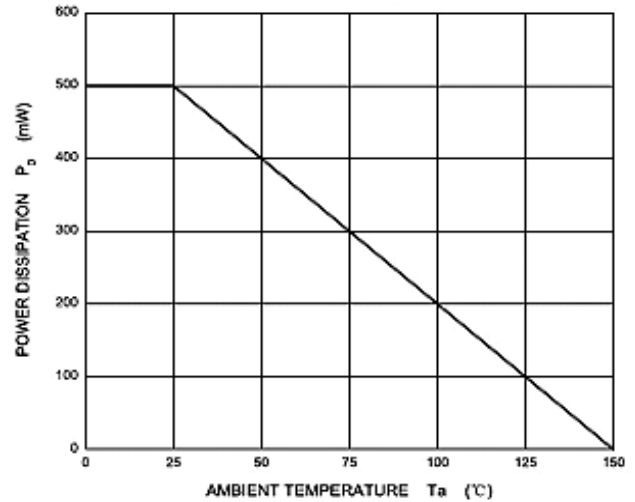
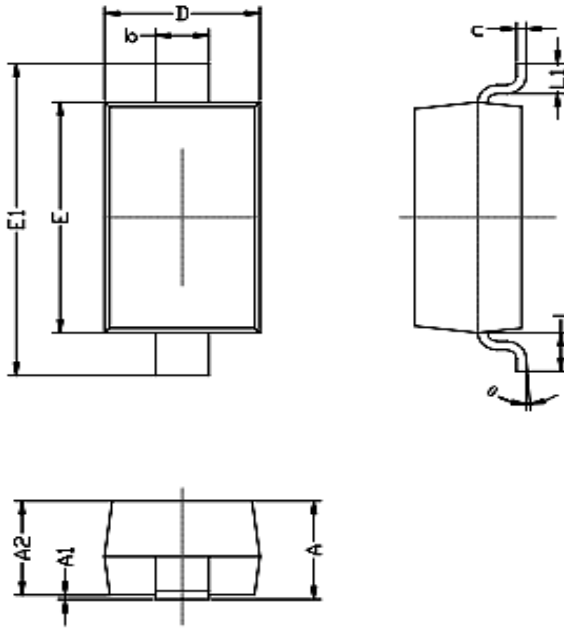


Fig 4: Power Derating Curve



PACKAGE DETAILS

SOD-123GW PACKAGE



SYMBOL	MIN(mm)	MAX(mm)
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.450	0.650
c	0.080	0.150
D	1.500	1.700
E	2.600	2.800
E1	3.550	3.850
L	0.500 REF	
L1	0.250	0.450
θ	0°	8°

All Dimensions are in mm

Mechanical Data

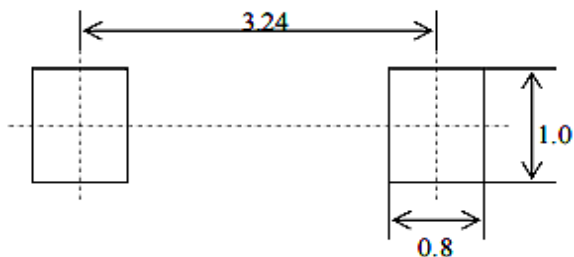
SOD-123GW Small Outline Plastic Package

Polarity: Color band denotes cathode end

Epoxy UL: 94V-0

Mounting Position: Any

Recommended PCB pad layout



Center distance:	3.24
Foot width:	0.55
Pad width:	1.00
Foot length:	0.50
Pad length:	0.80

All Dimensions are in mm

General Instructions:

1. Plastic package size: 2.70 X 1.60 sq. mm
2. General tolerances are: ± 0.05 mm



Recommended Product Storage Environment for Discrete Semiconductor Devices

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

Shelf Life of CDIL Products

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.

If products are stored longer than the shelf life of 2 years the products shall be subjected to quality check as per CDIL quality procedure.

The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

Floor Life of CDIL Products and MSL Level

When the products are opened from the original packing, the floor life will start.

For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	Time	Condition
1	Unlimited	≤30 °C / 85% RH
2	1 Year	≤30 °C / 60% RH
2a	4 Weeks	≤30 °C / 60% RH
3	168 Hours	≤30 °C / 60% RH
4	72 Hours	≤30 °C / 60% RH
5	48 Hours	≤30 °C / 60% RH
5a	24 Hours	≤30 °C / 60% RH
6	Time on Label(TOL)	≤30 °C / 60% RH



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Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



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CIN No. U32109DL1964PTC004291

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Rev0_19082021ESW