

# Surface Mount Low Leakage Diode

## FEATURE

- Ultra-Small Surface Mount Package
- Very Low Leakage Current
- Lead Free/RoHS Compliant )
- Qualified to AEC-Q101 Standards for High Reliability
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

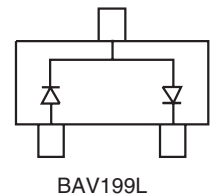
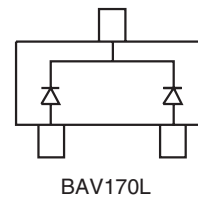
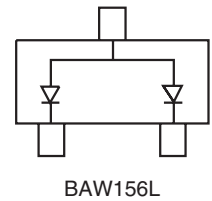
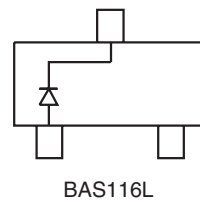
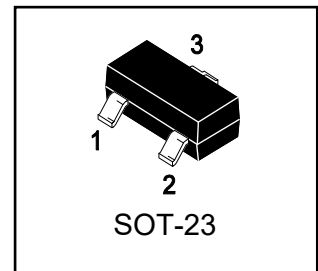
## MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Weight: 0.002 grams (approx.)

## DEVICE MARKING ORDERING INFORMATION

Device	Marking	Shipping
BAS116L S-BAS116L	K50	3000 Tape & Reel
BAW156L S-BAW156L	53	3000 Tape & Reel
BAV170L S-BAV170L	51	3000 Tape & Reel
BAV199L S-BAV199L	52	3000 Tape & Reel

**BAS116L**  
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**BAW156L**  
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**BAV199L**  
**S-BAV199L**



## Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	85	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	60	V
Forward Continuous Current	I <sub>FM</sub>	215	mA
		125	
Repetitive Peak Forward Current	I <sub>FRM</sub>	500	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	4.0	A
@ t = 1.0μs		1.0	
@ t = 1.0ms		0.5	
Power Dissipation	P <sub>d</sub>	150	mW
Thermal Resistance Junction to Ambient Air	R <sub>θJA</sub>	833	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C



# BAS116L,S-BAS116L, BAV170L,S-BAV170L BAW156L,S-BAW156L, BAV199L,S-BAV199L

## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	85	—	—	V	$I_R = 100\mu\text{A}$
Forward Voltage	$V_F$	—	—	0.90 1.0 1.1 1.25	V	$I_F = 1.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 150\text{mA}$
Leakage Current (Note 3)	$I_R$	—	—	5.0 80	nA nA	$V_R = 75\text{V}$ $V_R = 75\text{V}, T_j = 150^\circ\text{C}$
Total Capacitance	$C_T$	—	2	—	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	—	3.0	$\mu\text{s}$	$I_F = I_R = 10\text{mA}$ , $t_{rr} = 0.1 \times I_R, R_L = 100\Omega$

Notes: 3. Short duration test pulse used to minimize self-heating effect.

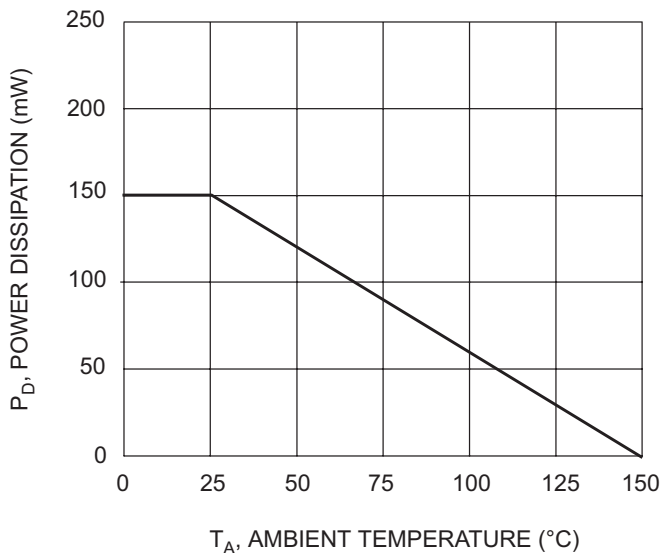


Fig. 1 Power Derating Curve

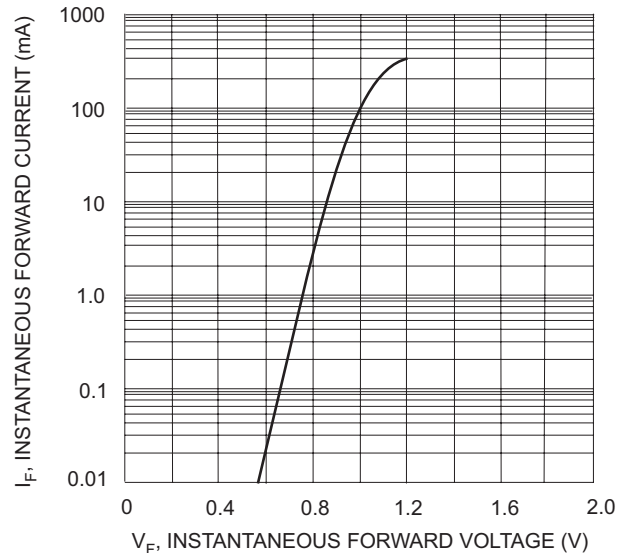


Fig. 2 Typical Forward Characteristics

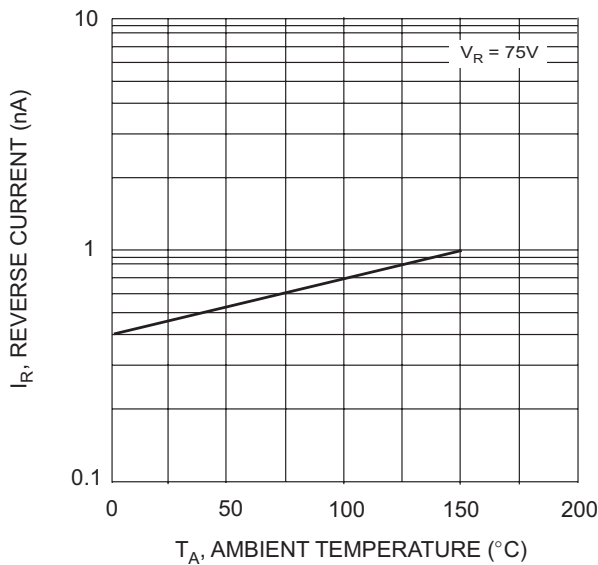


Fig. 3 Typical Reverse Characteristics

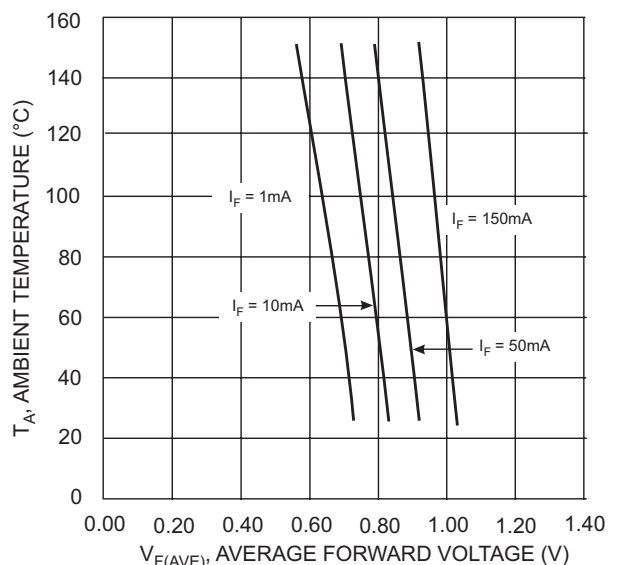
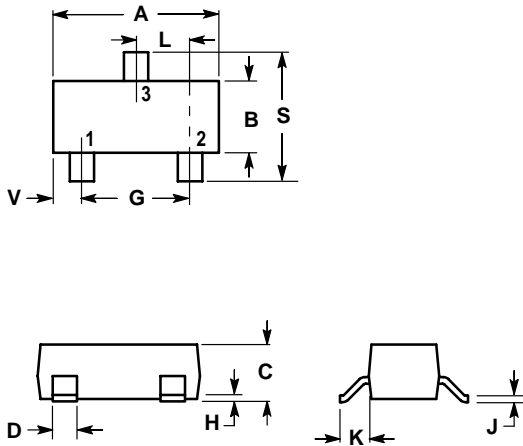


Fig. 4 Typical Forward Voltage vs Ambient Temperature



# BAS116L,S-BAS116L, BAV170L,S-BAV170L BAW156L,S-BAW156L, BAV199L,S-BAV199L

## SOT-23



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- PIN 1. ANODE  
2. CAHODE  
3. CAHODE/ANODE

