

BAV56/BAV70/BAV99

HIGH SPEED SWITCHING RECTIFIERS



VOLTAGE:	70 Volts	CURRENT:	200 mA	SOT-23	Marking and Polarity
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FEATURES

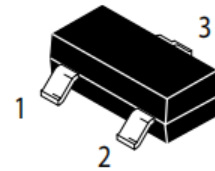
- Fast Switching Speed
- For General Purpose Switching Applications
- High Conductance

MECHANICAL DATA

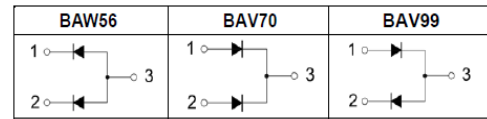
- **Package:** SOT-23
- **Epoxy UL:** 94V-0
- **Mounting position:** Any
- **Weight:** App. 0.01 grams (0.0004 ounce)

DEVICE MARKING

Device	Marking
BAV56	A1
BAV70	A4
BAV99	A7



Connection Diagram:



Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Power Dissipation (Note 1)	P_D	225	mW
Forward Current	I_F	200	mA
Reverse Voltage	V_R	70	V
Non-Repetitive Peak Forward Surge Current (@t=1.0us)	I_{FSM}	2.0	A
Operating Temperature Range	T_J	150	°C
Storage temperature range	T_{STG}	-55~+150	°C

Notes: 1.P. C. B mounted with 0.1*0.1"(2.54 x 2.54 mm) copper Pad Areas

Electrical Characteristic (Rating at 25°C ambient temperature unles otherwise pecified).

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Breakdown Voltage	$I_R=100\mu A$	V_{BR}	70	-	-	V
Forward Voltage	$I_F=1mA$	V_F	-	-	0.715	V
	$I_F=10mA$		-	-	0.855	
	$I_F=50mA$		-	-	1	
	$I_F=150mA$		-	-	1.25	
Reverse current	$V_R=70V$	I_R	-	-	2.5	uA
Capacitance	$V_R=0, f=1MHz$	C_T	-	-	1.5	pF
Reverse Recovery Time	$I_F = I_R = 10mA,$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$	t_{rr}	-	-	6	ns

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RATING AND CHARACTERISTIC CURVES

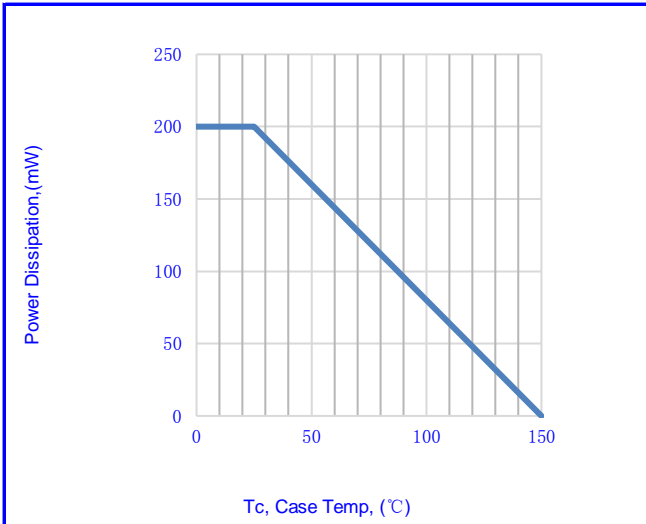


Fig.1-POWER DISSIPATION VS. AMBIENT TEMP.

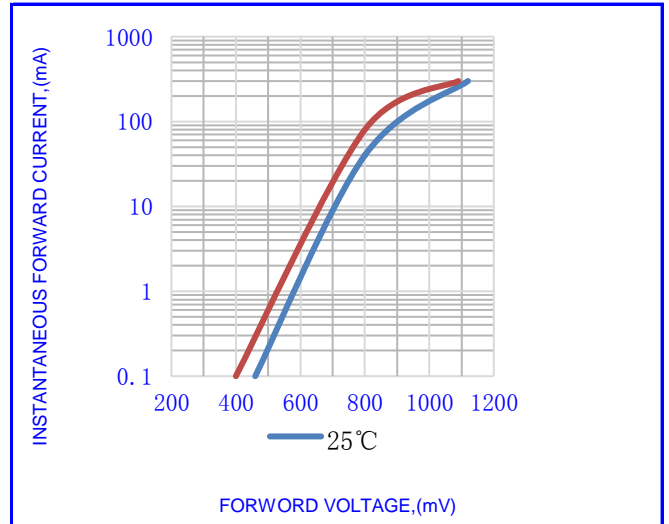


Fig.2- Forward characteristics

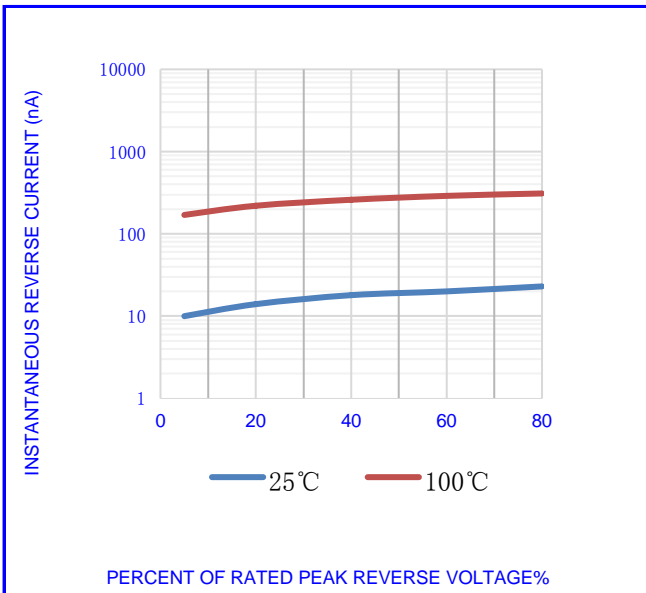


Fig.3- TYPICAL REVERSE CHARACTERISTICS

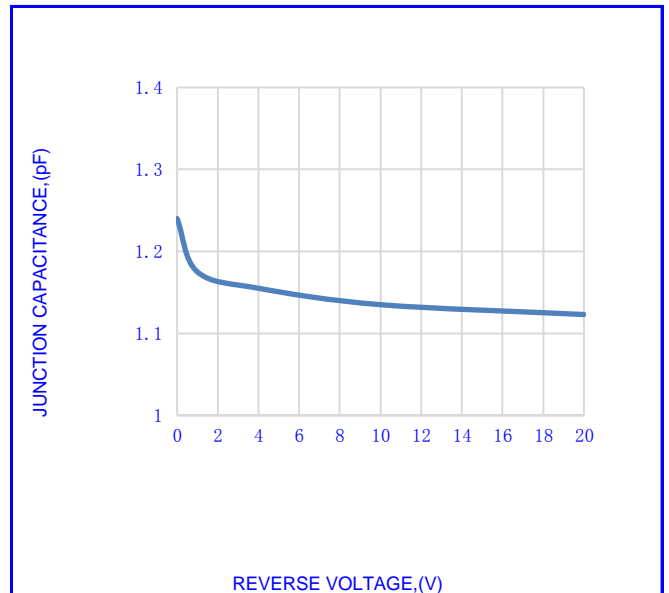


Fig.4- TYPICAL JUNCTION CAPACITANCE

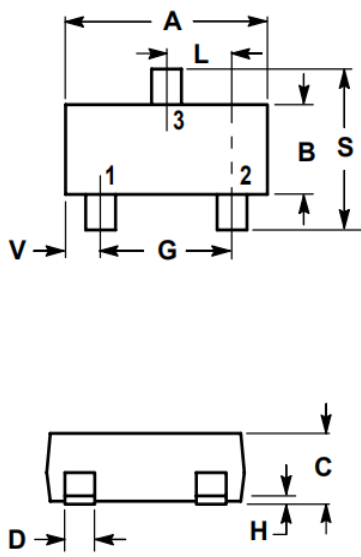
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OUTLINE DRAWINGS

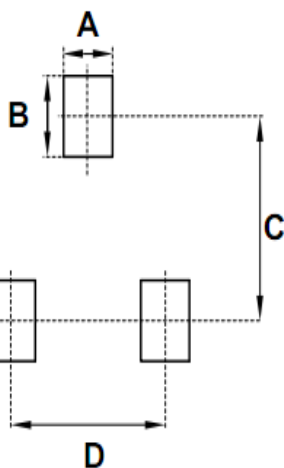
SOT-23



OUTLINE DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.800	-	3.040	0.1102	-	0.1197
B	1.200	-	1.400	0.0472	-	0.0551
C	0.890	-	1.110	0.0350	-	0.0437
D	0.370	-	0.500	0.0146	-	0.0197
G	1.780	-	2.040	0.0701	-	0.0803
H	0.013	-	0.100	0.0005	-	0.0039
J	0.085	-	0.177	0.0033	-	0.0070
K	0.350	-	0.690	0.0138	-	0.0272
L	0.890	-	1.020	0.0350	-	0.0402
S	2.100	-	2.640	0.0827	-	0.1039
V	0.450	-	0.600	0.0177	-	0.0236

RECOMMENDED LAYOUT DRAWINGS

SOT-23



RECOMMENDED MOUNTING PAD DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	0.600	-	-	0.0236	-
B	-	0.800	-	-	0.0315	-
C	-	2.020	-	-	0.0795	-
D	-	1.900	-	-	0.0748	-

PACKING INFORMATION

SOT-23

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
Tape Reel	Φ180	3000	340x340x40	6000	364x364x360	160000

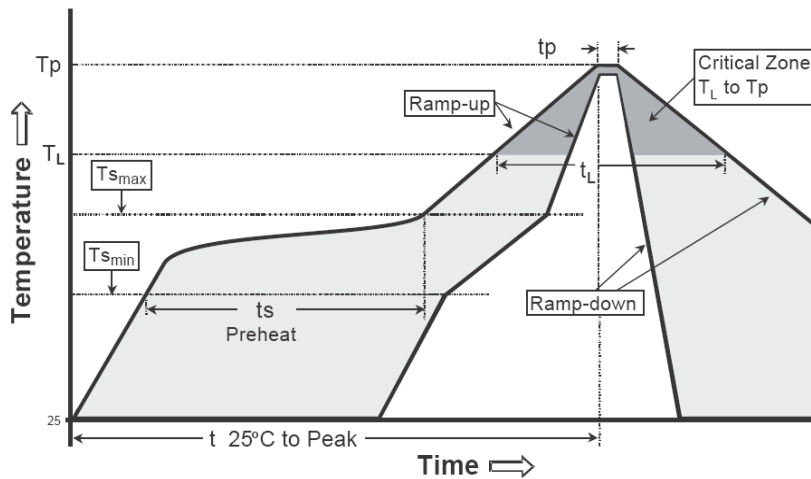
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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