

200mA, 70V SMD Switching Diode

FEATURES

- Fast switching speed
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)

MECHANICAL DATA

- Case: SOT-23
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 8 ± 0.5 mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	200	mA
V_{RRM}	70	V
I_{FSM}	2	A
V_F at $I_F=150$ mA	1.25	V
$T_{J\ MAX}$	150	°C
Package	SOT-23	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	BAW56	BAV70	BAV99	UNIT
Marking code on the device		A1	A4	A7	
Power dissipation	P_D	225			mW
Repetitive peak reverse voltage	V_{RRM}	70			V
Repetitive peak forward current	I_{FRM}	450			mA
Forward current	I_F	200			mA
Non-Repetitive peak forward surge current	@ $t = 1$ s	0.5			A
	@ $t = 1\mu\text{s}$	2			
Junction temperature range	T_J	-55 to +150			°C
Storage temperature range	T_{STG}	-55 to +150			°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	556	$^{\circ}\text{C/W}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)						
PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT	
Forward voltage per diode ⁽¹⁾	$I_F = 50\text{mA}, T_J = 25^{\circ}\text{C}$	V_F	-	1.00	V	
	$I_F = 150\text{mA}, T_J = 25^{\circ}\text{C}$			1.25		
Reverse voltage	$I_R = 100\ \mu\text{A}, T_J = 25^{\circ}\text{C}$	V_R	70	-	V	
Reverse current @ rated V_R per diode ⁽²⁾	$V_R = 70\ \text{V}, T_J = 25^{\circ}\text{C}$	I_R	-	2.5	μA	
Junction capacitance	BAW56, BAV70	$f=1\ \text{MHz}, V_R=1\text{V}$	C_J	-	2	pF
	BAV99			-	1.5	
Reverse recovery time	$I_F=I_R= 10\text{mA}, R_L= 100\Omega,$ $I_{RR}= 1\text{mA}$	t_{rr}	-	6	ns	

Notes:

1. Pulse test with $PW=0.3\ \text{ms}$
2. Pulse test with $PW=30\ \text{ms}$

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
BAxxx RF	SOT-23	3K / 7" Reel
BAxxx RFG	SOT-23	3K / 7" Reel
BAxxx-B0 RF	SOT-23	3K / 7" Reel
BAxxx-B0 RFG	SOT-23	3K / 7" Reel
BAxxx-D0 RF	SOT-23	3K / 7" Reel
BAxxx-D0 RFG	SOT-23	3K / 7" Reel

Notes:

1. "xx" is device code from "W56" to "V99"
2. "G" means green compound (halogen free)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Typical Forward Characteristics

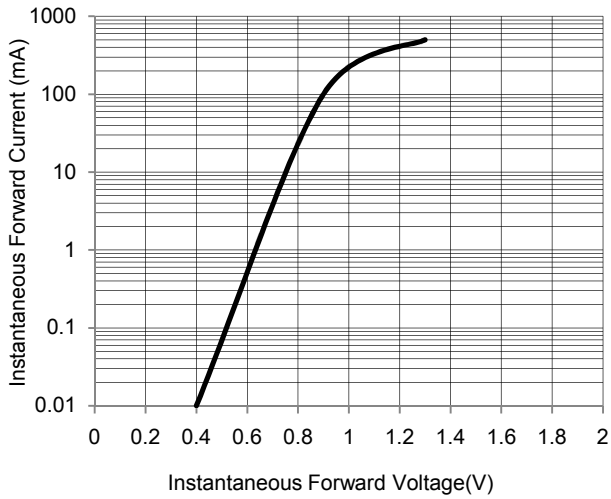


Fig. 2 Reverse Current VS. Junction Temperature

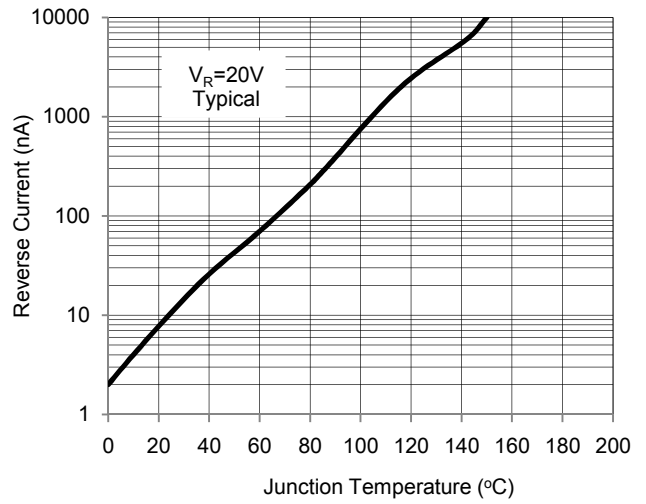
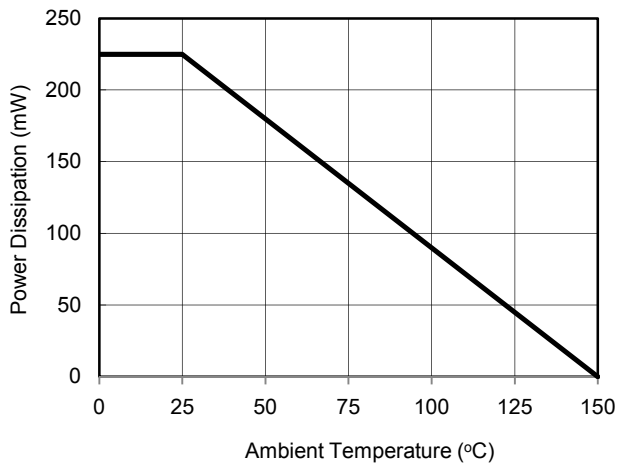
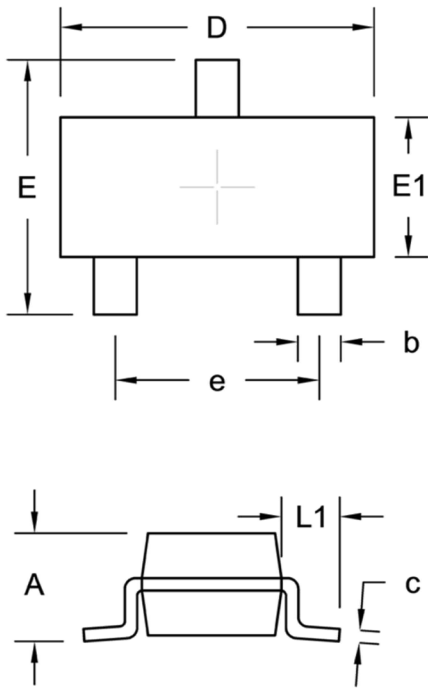


Fig.3 Admissible Power Dissipation Curve



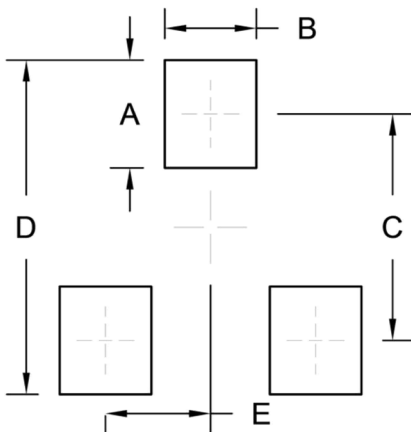
PACKAGE OUTLINE DIMENSION

SOT-23



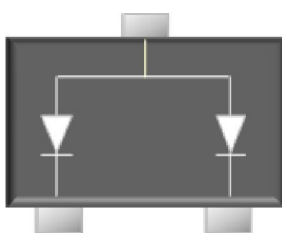
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.89	1.12	0.035	0.044
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	1.90 BSC		0.075 BSC	
L1	0.54 REF.		0.021 REF.	

SUGGESTED PAD LAYOUT

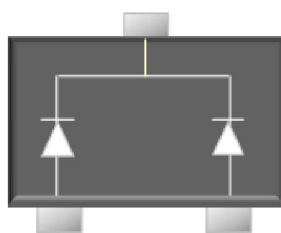


Symbol	Unit (mm)	Unit (inch)
A	1.00	0.039
B	0.85	0.033
C	2.10	0.083
D	3.10	0.122
E	0.98	0.039

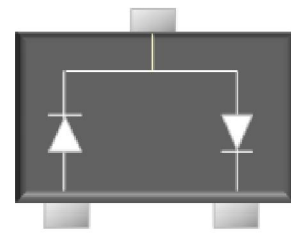
PIN CONFIGURATION



BAW56



BAV70



BAV99

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