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

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

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)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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 = 1s	I_{FSM}	0.5			A
	@ t = 1μs		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	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage per diode (1)		I_F = 50mA, T_J = 25°C	V_F	-	1.00	V
		I_F = 150mA, T_J = 25°C			1.25	
Reverse voltage		I_R = 100 µA, T_J = 25°C	V_R	70	-	V
Reverse current @ rated V_R per diode (2)		V_R = 70 V, T_J = 25°C	I_R	-	2.5	µA
Junction capacitance	BAW56, BAV70	f=1 MHz, V_R=1V	C_J	-	2	pF
	BAV99			-	1.5	
Reverse recovery time		I_F=I_R= 10mA , R_L= 100Ω, I_{RR}= 1mA	t_{rr}	-	6	ns

Notes:

1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 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°C unless otherwise noted)

Fig.1 Typical Forward Characteristics

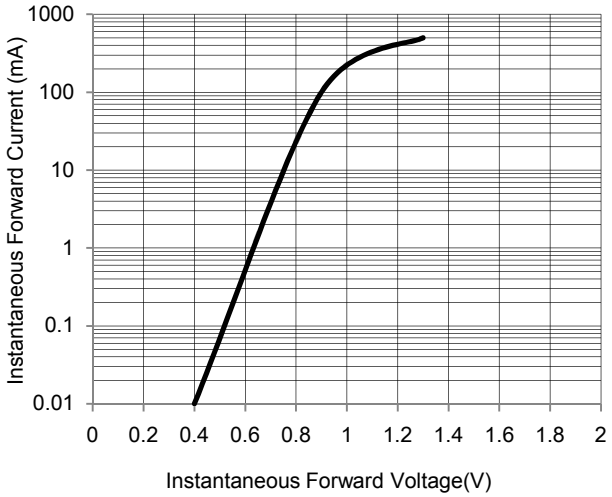


Fig. 2 Reverse Current VS. Junction Temperature

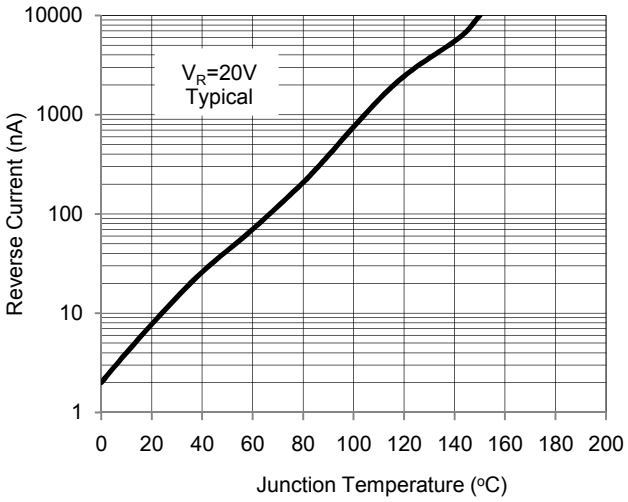
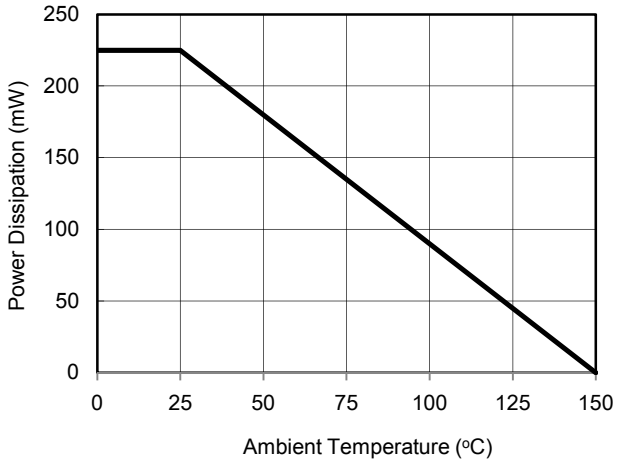
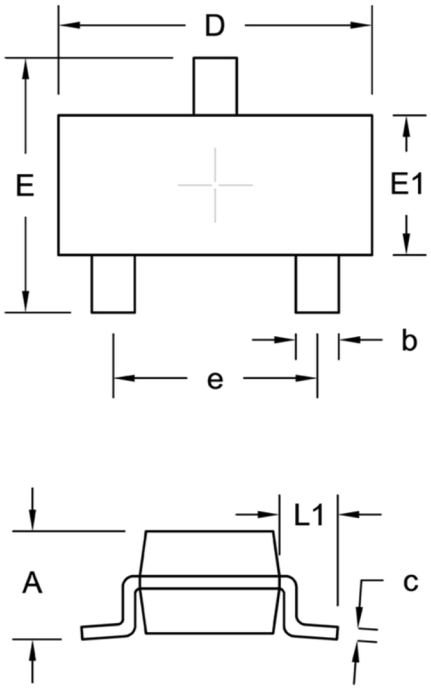


Fig.3 Admissible Power Dissipation Curve



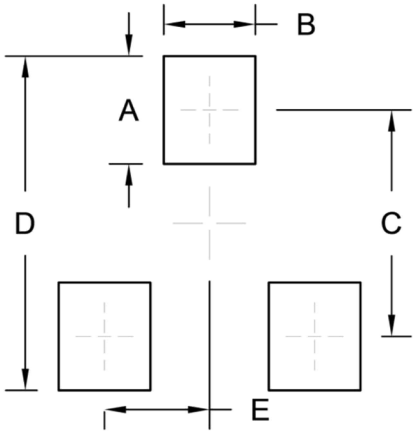
PACKAGE OUTLINE DIMENSION

SOT-23



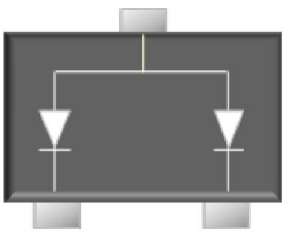
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.89	1.12	0.035	0.044
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	1.90 BSC		0.075 BSC	
L1	0.54 REF.		0.021 REF.	

SUGGESTED PAD LAYOUT

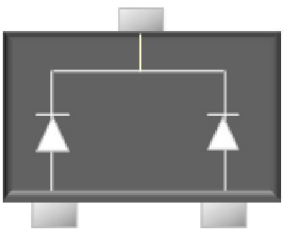


Symbol	Unit (mm)	Unit (inch)
A	1.00	0.039
B	0.85	0.033
C	2.10	0.083
D	3.10	0.122
E	0.98	0.039

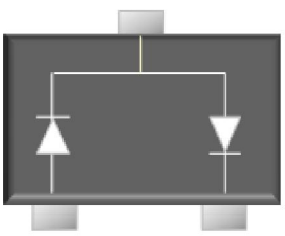
PIN CONFIGURATION



BAW56



BAV70



BAV99

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