

## High Speed Switching Diode



**SOT-23**

### Features

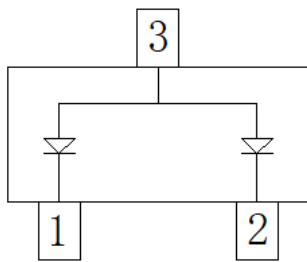
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- $V_{BR}$  100V
- $I_{FAV}$  200mA@ Single diode loaded
- Part no. with suffix "Q" means AEC-Q101 qualified

### Applications

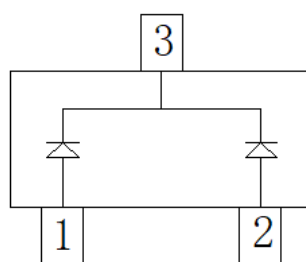
- Extreme fast switches
- Automotive

### Mechanical Data

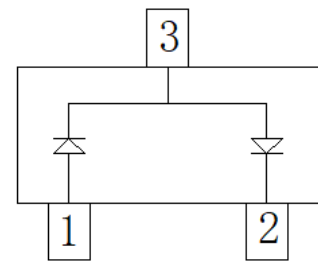
- **Case:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102



BAW56Q



BAV70Q



BAV99Q

### ■ Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	CONDITIONS	VALUE
Reverse Breakdown Voltage	$V_{BR}$	V		100
Maximum RMS voltage	$V_{RMS}$	V		70
Average Forward Current	$I_{FAV[1]}$	mA		200
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	A	$t_p=1\text{ ms}$	1
Power Dissipation	$P_{tot[1]}$	mW		350
Thermal Resistance Junction to Ambient	$R_{thJA}$	$^\circ\text{C}/\text{W}$		357
Maximum Junction Temperature	$T_j$	$^\circ\text{C}$		-55 to +150
Storage Temperature Range	$T_{stg}$	$^\circ\text{C}$		-55 to +150

[1] Single diode loaded



## BAW56Q&BAV70Q&BAV99Q

### ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Forward Voltage	V <sub>F</sub>	V	I <sub>F</sub> =1mA			0.715
			I <sub>F</sub> =10mA			0.855
			I <sub>F</sub> =50mA			1.0
			I <sub>F</sub> =150mA			1.25
Reverse Current	I <sub>R</sub>	μA	V <sub>R</sub> =75V			1
Reverse Breakdown Voltage	V <sub>BR</sub>	V	I <sub>R</sub> =10μA	100		
Junction Capacitance	C <sub>j</sub>	pF	V <sub>R</sub> =V <sub>F</sub> =0V, f =1MHz		1.9	4
Reverse Recovery Time	t <sub>rr</sub>	ns	I <sub>F</sub> =10mA, I <sub>rr</sub> =0.1I <sub>R</sub> , R <sub>L</sub> =100Ω			4

### ■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BAW56Q&BAV70Q&BAV99Q	F2	Approximate 0.010	3000	30000	120000	7" reel



# BAW56Q&BAV70Q&BAV99Q

## ■ Characteristics (Typical)

Fig.1:  $P_D-T_A$

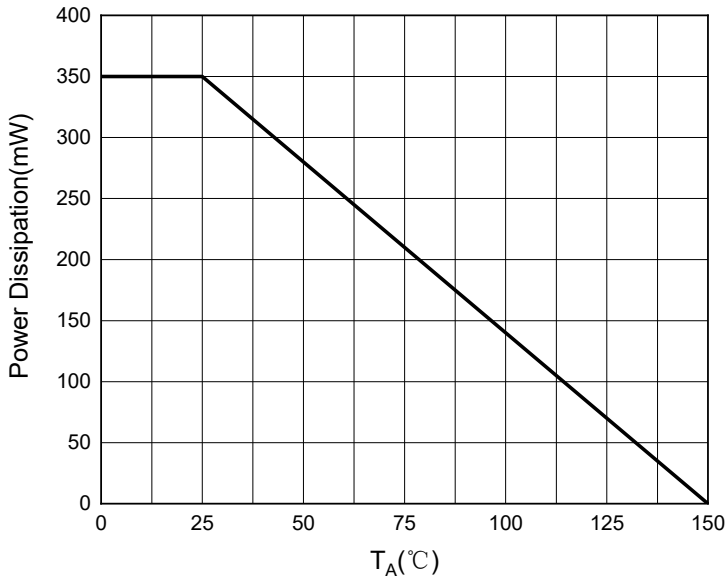


Fig.2: Capacitance Characteristics

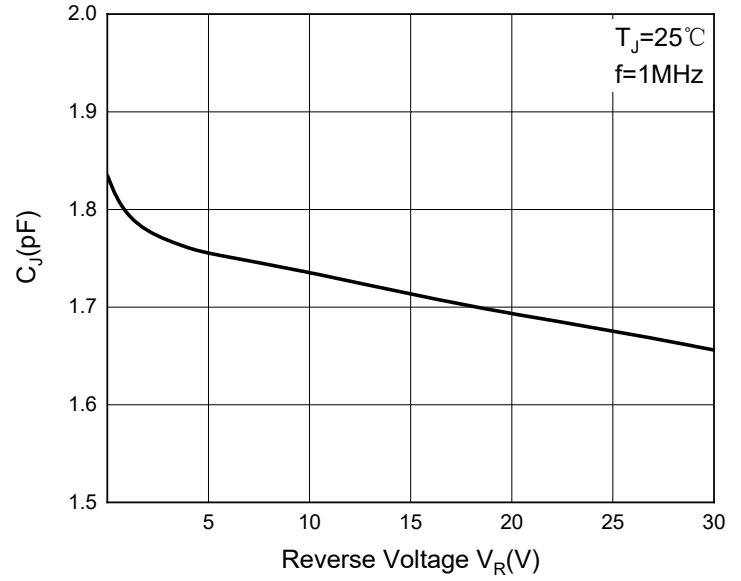


Fig.3: Forward Characteristics

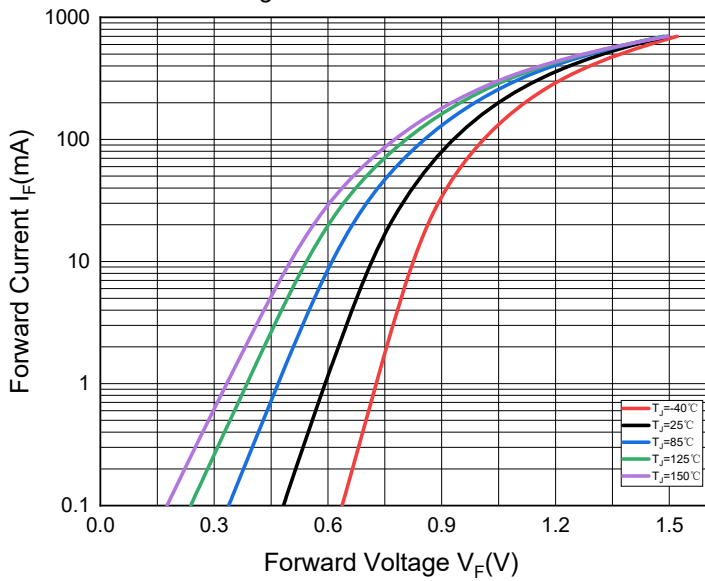
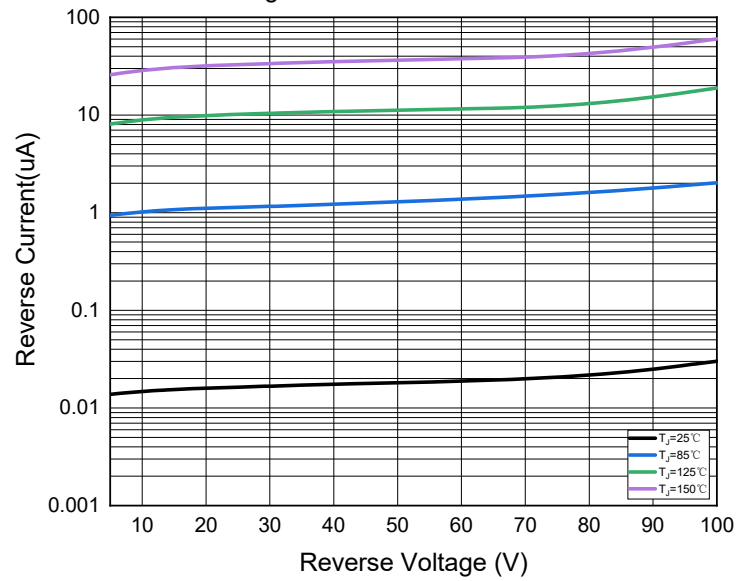


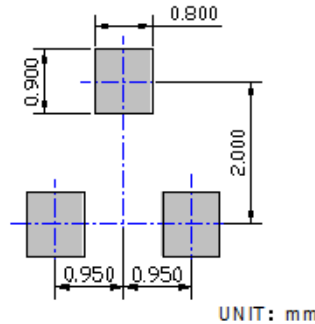
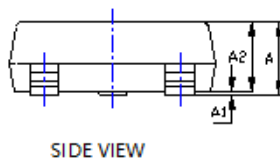
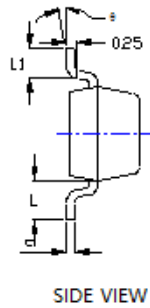
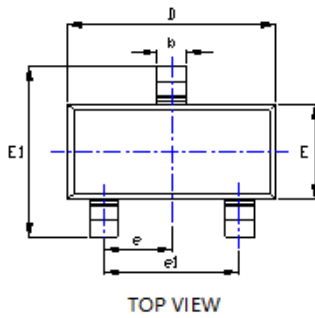
Fig.4: Reverse Characteristics





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## ■ Outline Dimensions

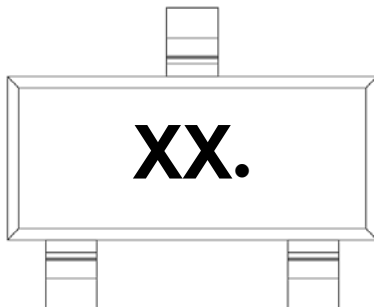


UNIT: mm

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
φ	0°	8°	0°	8°

NOTE:  
 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.  
 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.  
 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

## ■ Marking Information



PN	Marking Code
BAW56Q	A1
BAV70Q	A4
BAV99Q	A7

Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. XX is Marking Code
4. Body color: Black



## BAW56Q&BAV70Q&BAV99Q

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