

## High Speed Switching Diode



**SOT-323**

### Features

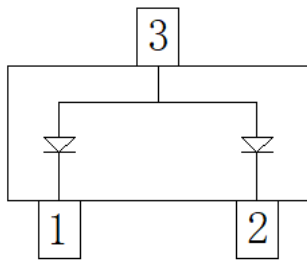
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- $V_{BR}$  100V
- $I_{FAV}$  150mA@ Single diode loaded
- Part no. with suffix "Q" means AEC-Q101 qualified

### Applications

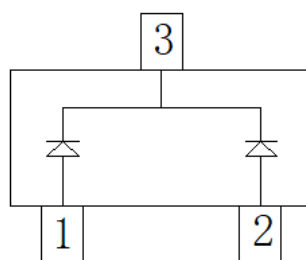
- Extreme fast switches
- Automotive

### Mechanical Data

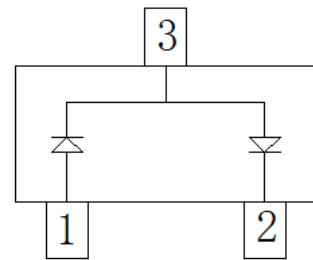
- **Case:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102



BAW56WTQ  
Marking:KJC



BAV70WTQ  
Marking:KJA



BAV99WTQ  
Marking: KJG

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

PARAMETER	SYMBOL	UNIT	CONDITIONS	VALUE
Reverse Breakdown Voltage	$V_{BR}$	V		100
Average Forward Current	$I_{FAV[1]}$	mA		150
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	A	$t_p=1\text{ ms}$	1
Power Dissipation	$P_{tot}^{(1)(2)}$	mW		200
Thermal Resistance Junction to Ambient	$R_{thJA}^{(2)}$	$^\circ\text{C}/\text{W}$		625
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

(2) Device mounted on an FR4 PCB(1.0 x 1.0 x 0.06 inch), single-sided copper, tin-plated and standard footprint.



## BAW56WTQ&BAV70WTQ&BAV99WTQ

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

PARAMETER	SYMBOL	UNIT	CONDITIONS	MIN	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> =100μA	100	
Diode Capacitance	C <sub>j</sub>	pF	V <sub>R</sub> =V <sub>F</sub> =0V, f = 1MHz		2
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)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BAW56WTQ BAV70WTQ BAV99WTQ	F2	Approximate 0.006	3000	30000	120000	7" reel



# BAW56WTQ&BAV70WTQ&BAV99WTQ

## ■ Characteristics (Typical)

Fig.1:  $P_D-T_A$

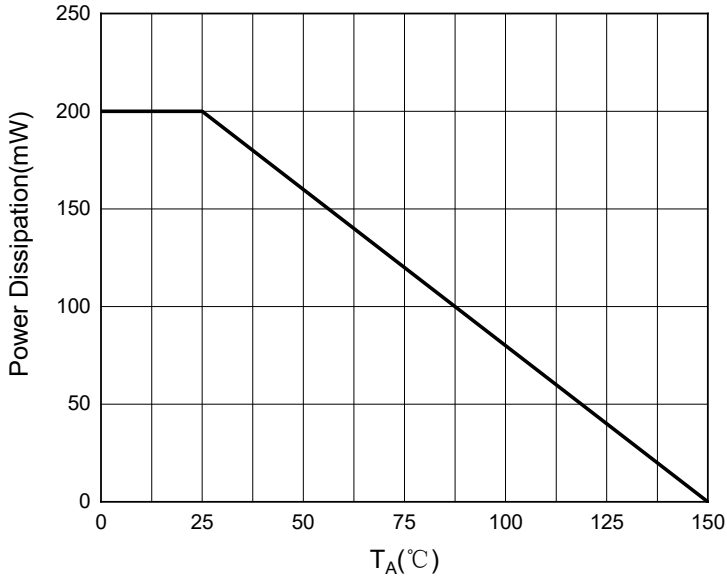


Fig.2: Capacitance Characteristics

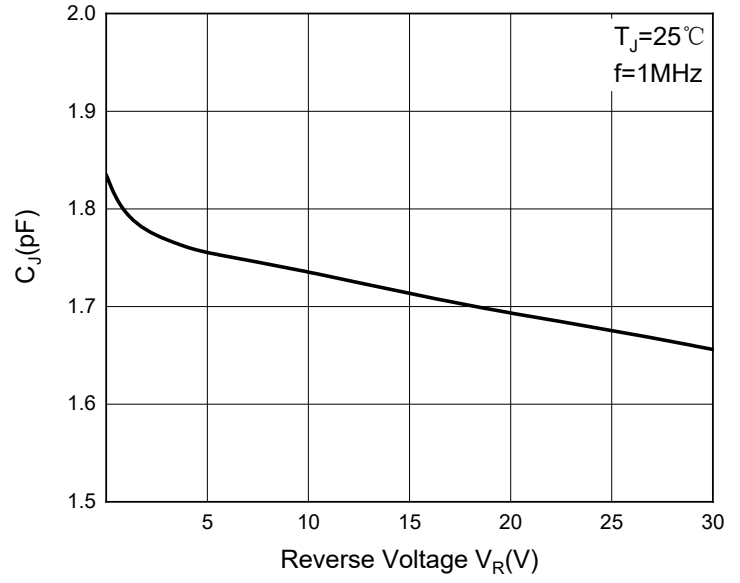


Fig.3: Forward Characteristics

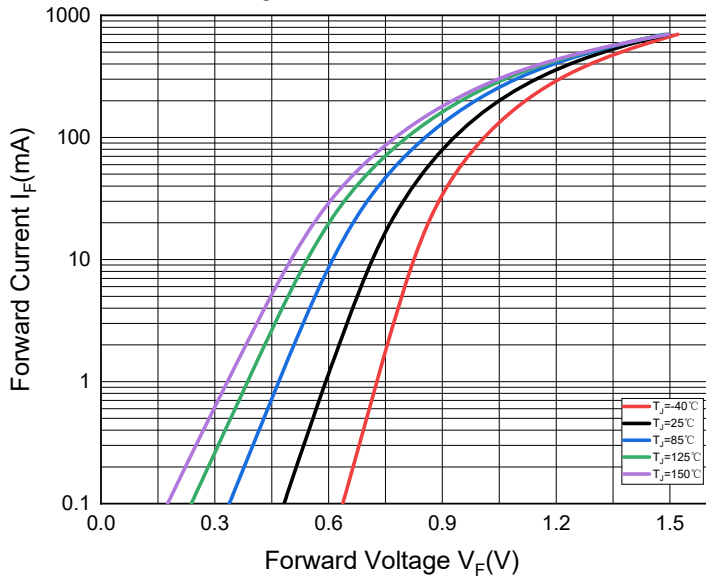
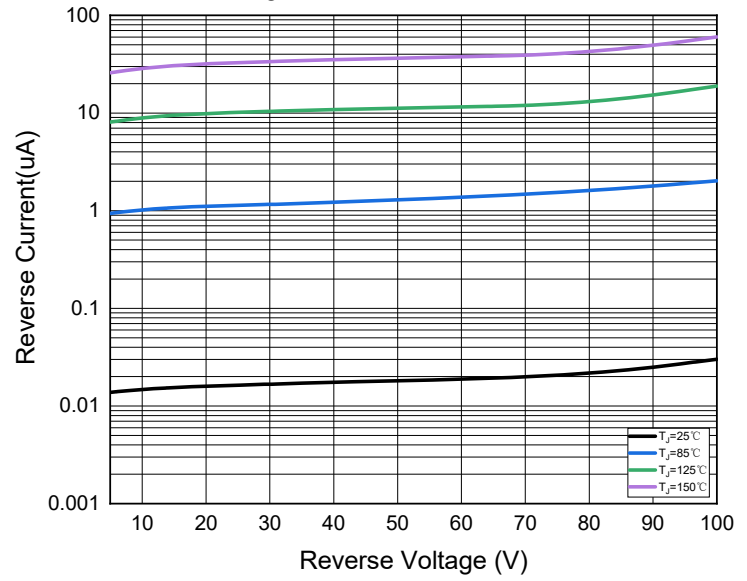


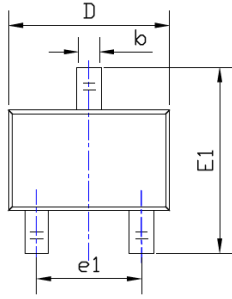
Fig.4: Reverse Characteristics



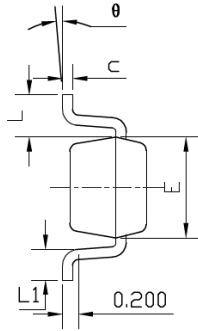


# BAW56WTQ&BAV70WTQ&BAV99WTQ

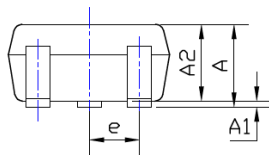
## ■ Outline Dimensions



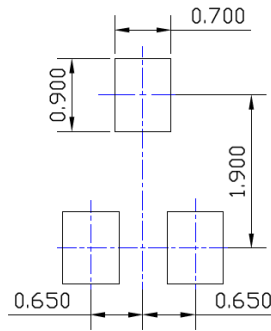
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

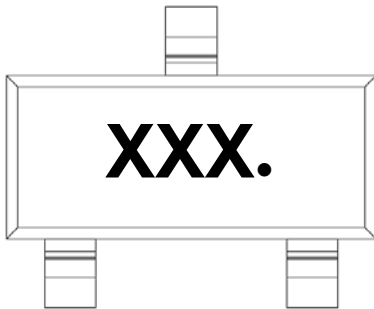
**NOTE:**

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
BAW56WTQ	KJC
BAV70WTQ	KJA
BAV99WTQ	KJG

**Note:**

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



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