



# BAS116-AU/BAW156-AU/BAV170-AU/BAV199-AU

## SURFACE MOUNT, LOW LEAKAGE SWITCHING DIODES

**VOLTAGE** 100 Volts      **POWER** 250mWatts

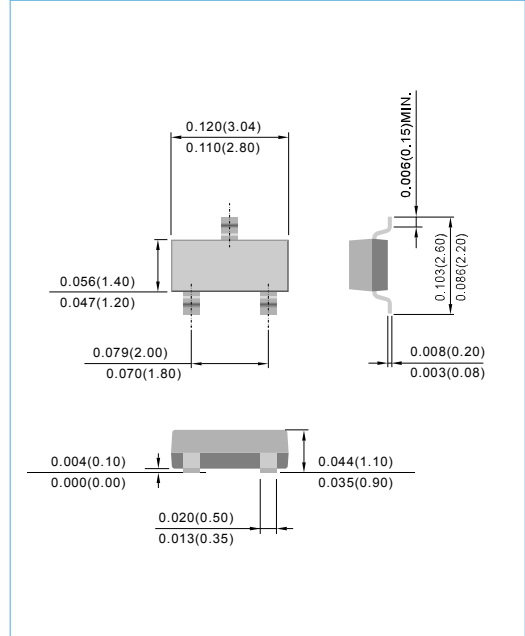
**SOT-23**      Unit : inch(mm)

### FEATURES

- Surface mount package ideally suited for automatic insertion.
- Very low leakage current. 2pA typical at VR=75V.
- Low capacitance. 2pF max at VR=0V, f=1MHz
- Acquire quality system certificate : TS16949
- AEC-Q101 qualified
- Lead free in comply with EU RoHS 2002/95/EC directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case: SOT-23 plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx weight: 0.0084 grams
- Marking: BAS116-AU: PA,BAW156-AU:P4,BAV170-AU:P3,BAV199-AU:PB



### ABSOLUTE RATINGS (each diode)

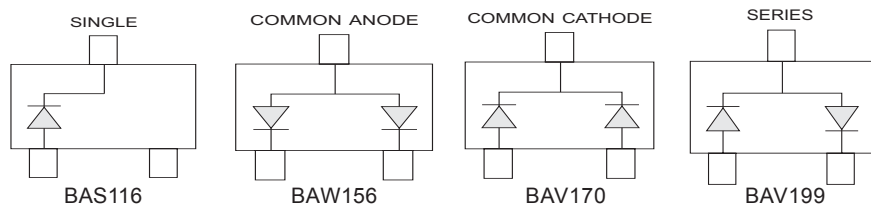
| PARAMETER  | Symbol    | Value | Units |
|--|-----------|-------|-------|
| Reverse Voltage                                      | $V_R$     | 75    | V     |
| Peak Reverse Voltage                                 | $V_{RM}$  | 100   | V     |
| Continuous Forward Current                           | $I_F$     | 0.2   | A     |
| Non-repetitive Peak Forward Surge Current at t=1.0us | $I_{FSM}$ | 4.0   | A     |

### THERMAL CHARACTERISTICS

| PARAMETER  | Symbol          | Value      | Units |
|--|-----------------|------------|-------|
| Power Dissipation (Note 1)                       | $P_{TOT}$       | 250        | mW    |
| Thermal Resistance, Junction to Ambient (Note 1) | $R_{\theta JA}$ | 500        | °C/W  |
| Junction Temperature                             | $T_J$           | -55 to 150 | °C    |
| Storage Temperature                              | $T_{STG}$       | -55 to 150 | °C    |

**NOTE:**

1. FR-4 Board = 70 x 60 x 1mm.





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### ELECTRICAL CHARACTERISTICS (each diode) (TA=25°C, unless otherwise noted)

| PARAMETER                 | Symbol     | Test Condition   | MIN. | TYP.         | MAX.                      | Units |
|---------------------------|------------|--|------|--------------|---------------------------|-------|
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_R=100 \mu A$  | 75   | -            | -                         | V     |
| Reverse Current           | $I_R$      | $V_R=75 V$<br>$V_R=75 V, T_J=150 ^\circ C$               | -    | 0.002<br>8.0 | 5<br>80                   | nA    |
| Forward Voltage           | $V_F$      | $I_F=1 mA$<br>$I_F=10 mA$<br>$I_F=50 mA$<br>$I_F=150 mA$ | -    | -            | 0.9<br>1.0<br>1.1<br>1.25 | V     |
| Total Capacitance         | $C_j$      | $V_R=0 V, f=1 MHz$                                       | -    | -            | 2.0                       | pF    |
| Reverse Recovery Time     | $t_{rr}$   | $I_F=I_R=10 mA, R_L=100 \Omega$                          | -    | -            | 3.0                       | us    |

### CHARACTERISTIC CURVES (each diode)

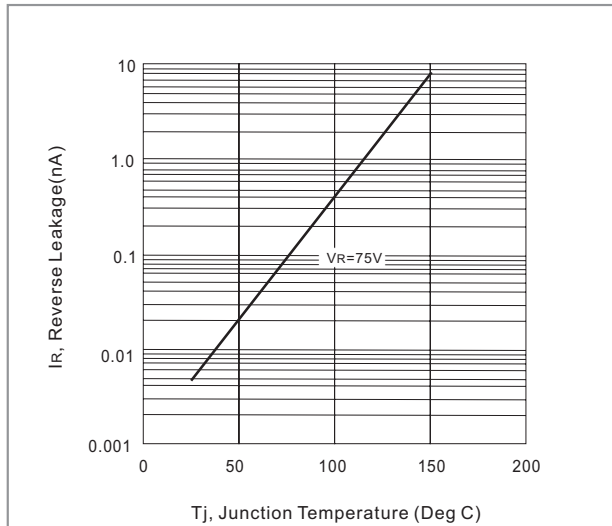


Fig. 1-Reverse Leakage vs. Junction Temperature

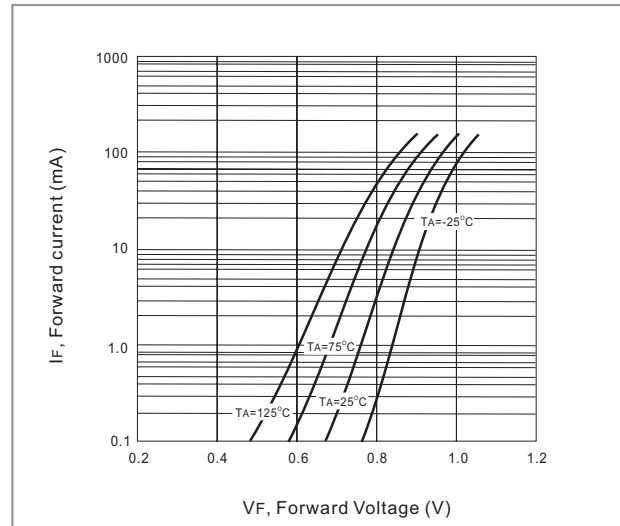


Fig. 2-Forward Current vs. Forward Voltage

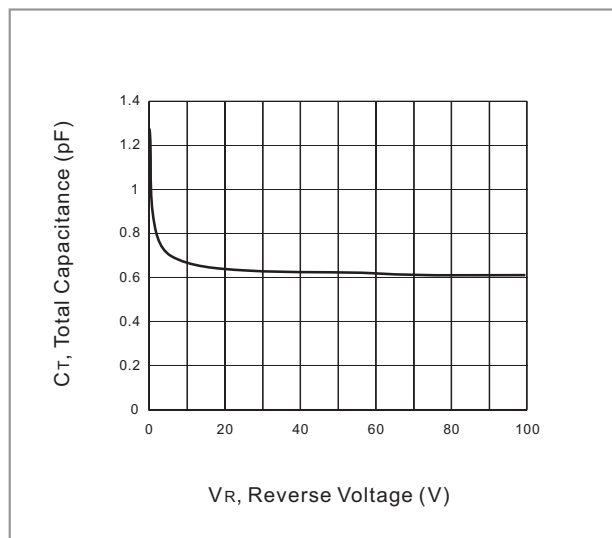
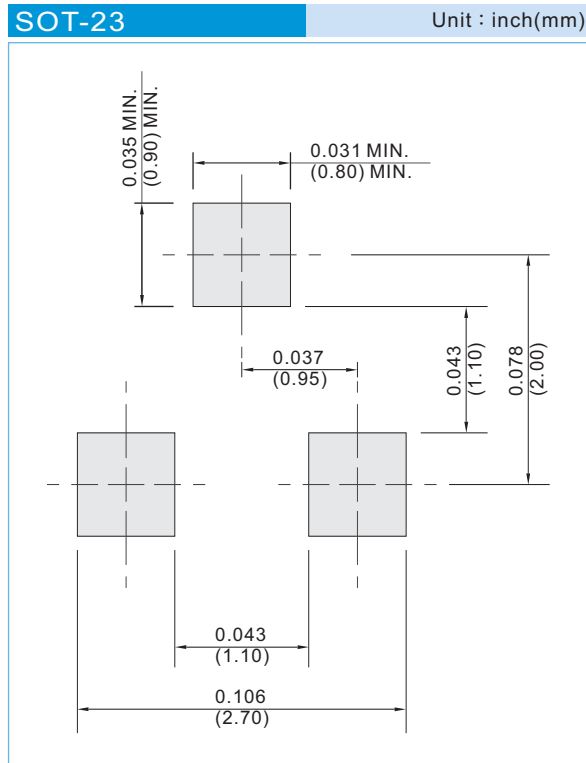


Fig. 3- Total capacitance vs. Reverse Voltage



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### MOUNTING PAD LAYOUT



### ORDER INFORMATION

- Packing information
  - T/R - 12K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel



## BAS116-AU/BAW156-AU/BAV170-AU/BAV199-AU

### Part No\_packing code\_Version

BAS116-AU\_R1\_000A1

BAS116-AU\_R2\_000A1

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | <b>HF</b>                 | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | <b>RoHS</b>               | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                           |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                           |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                           |                      |                                       |



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