

BAV99WT1, BAV99RWT1

Preferred Devices

SC-70/SOT-323 Dual Series Switching Diodes

The BAV99WT1 is a smaller package, equivalent to the BAV99LT1.

Suggested Applications

- ESD Protection
- Polarity Reversal Protection
- Data Line Protection
- Inductive Load Protection
- Steering Logic

MAXIMUM RATINGS (Each Diode)

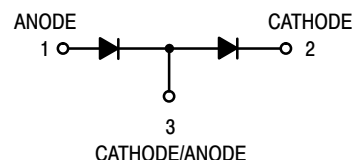
| Rating | Symbol | Value | Unit |
|---|-----------------|-------------------|------|
| Reverse Voltage | V_R | 70 | Vdc |
| Forward Current | I_F | 215 | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500 | mAdc |
| Repetitive Peak Reverse Voltage | V_{RRM} | 70 | V |
| Average Rectified Forward Current (Note 1.) (averaged over any 20 ms period) | $I_{F(AV)}$ | 715 | mA |
| Repetitive Peak Forward Current | I_{FRM} | 450 | mA |
| Non-Repetitive Peak Forward Current $t = 1.0 \mu s$ $t = 1.0 ms$ $t = 1.0 S$ | I_{FSM} | 2.0 1.0 0.5 | A |

1. FR-5 = $1.0 \times 0.75 \times 0.062$ in.

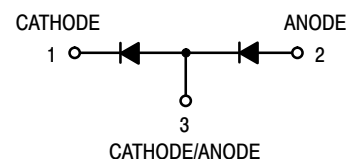


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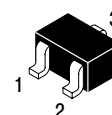
<http://onsemi.com>



BAV99WT1
CASE 419-02, STYLE 9
SC-70/SOT-323

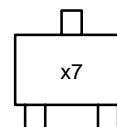


BAV99RWT1
CASE 419-02, STYLE 10
SC-70/SOT-323



SC-70
CASE 419

MARKING DIAGRAM



A7 = BAV99WT1
F7 = BAV99RWT1

ORDERING INFORMATION

| Device | Package | Shipping |
|-----------|---------|------------------|
| BAV99WT1 | SC-70 | 3000/Tape & Reel |
| BAV99RWT1 | SC-70 | 3000/Tape & Reel |

Preferred devices are recommended choices for future use and best overall value.

BAV99WT1, BAV99RWT1

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-------------|----------------------|
| Total Device Dissipation FR-5 Board, (Note 1.) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 200 | mW |
| | | 1.6 | mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 625 | $^\circ\text{C/W}$ |
| Total Device Dissipation Alumina Substrate, (Note 2.) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 300 | mW |
| | | 2.4 | mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 417 | $^\circ\text{C/W}$ |
| Junction and Storage Temperature | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |

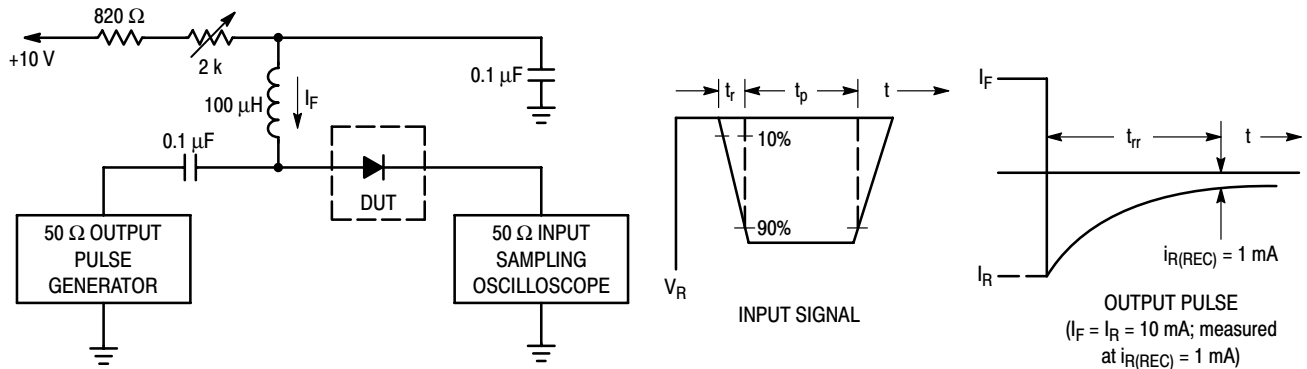
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Each Diode)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

OFF CHARACTERISTICS

| | | | | |
|--|------------|------------------|----------------------------|-----------------|
| Reverse Breakdown Voltage ($I_{BR} = 100 \mu\text{A}$) | $V_{(BR)}$ | 70 | — | Vdc |
| Reverse Voltage Leakage Current ($V_R = 70 \text{ Vdc}$) ($V_R = 25 \text{ Vdc}, T_J = 150^\circ\text{C}$) ($V_R = 70 \text{ Vdc}, T_J = 150^\circ\text{C}$) | I_R | — — — | 2.5 30 50 | μAdc |
| Diode Capacitance ($V_R = 0, f = 1.0 \text{ MHz}$) | C_D | — | 1.5 | pF |
| Forward Voltage ($I_F = 1.0 \text{ mAdc}$) ($I_F = 10 \text{ mAdc}$) ($I_F = 50 \text{ mAdc}$) ($I_F = 150 \text{ mAdc}$) | V_F | — — — — | 715 855 1000 1250 | mVdc |
| Reverse Recovery Time ($I_F = I_R = 10 \text{ mAdc}, i_{R(REC)} = 1.0 \text{ mAdc}$) (Figure 1) $R_L = 100 \Omega$ | t_{rr} | — | 6.0 | ns |
| Forward Recovery Voltage ($I_F = 10 \text{ mA}, t_r = 20 \text{ ns}$) | V_{FR} | — | 1.75 | V |

- FR-5 = $1.0 \times 0.75 \times 0.062 \text{ in.}$
- Alumina = $0.4 \times 0.3 \times 0.024 \text{ in.}$ 99.5% alumina.



- Notes: (a) A 2.0 k Ω variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 (b) Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
 (c) $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

BAV99WT1, BAV99RWT1

CURVES APPLICABLE TO EACH DIODE

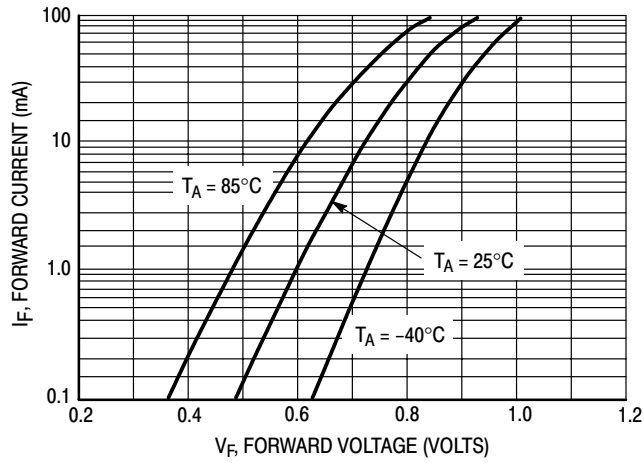


Figure 2. Forward Voltage

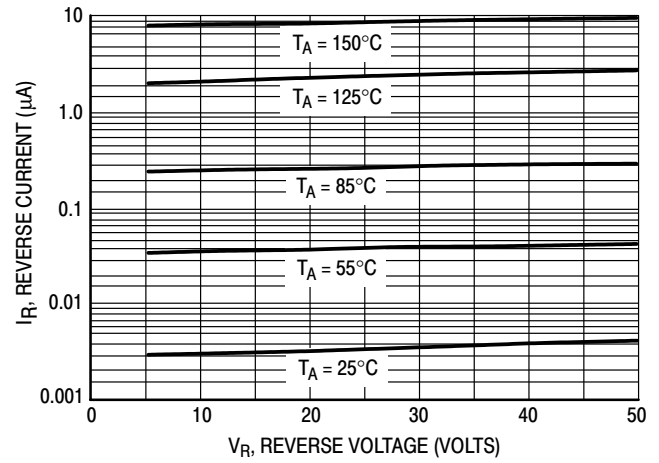


Figure 3. Leakage Current

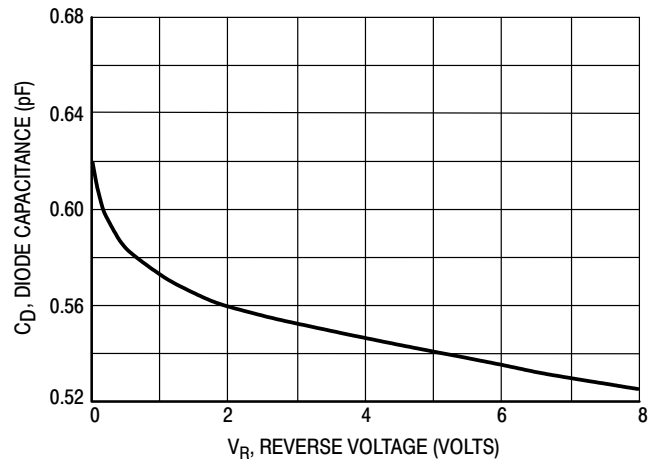
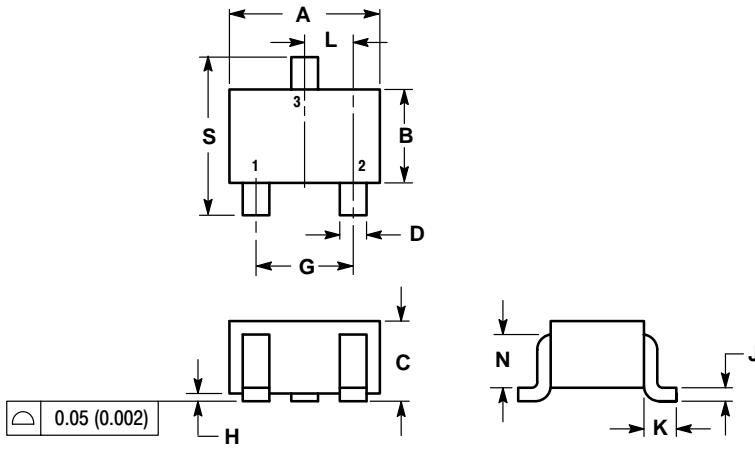


Figure 4. Capacitance

BAV99WT1, BAV99RWT1

PACKAGE DIMENSIONS

SC-70/SOT-323
CASE 419-04
ISSUE L



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.071 | 0.087 | 1.80 | 2.20 |
| B | 0.045 | 0.053 | 1.15 | 1.35 |
| C | 0.032 | 0.040 | 0.80 | 1.00 |
| D | 0.012 | 0.016 | 0.30 | 0.40 |
| G | 0.047 | 0.055 | 1.20 | 1.40 |
| H | 0.000 | 0.004 | 0.00 | 0.10 |
| J | 0.004 | 0.010 | 0.10 | 0.25 |
| K | 0.017 | REF | 0.425 | REF |
| L | 0.026 | BSC | 0.650 | BSC |
| N | 0.028 | REF | 0.700 | REF |
| S | 0.079 | 0.095 | 2.00 | 2.40 |

STYLE 9:

- PIN 1. ANODE
- CATHODE
- CATHODE-ANODE


STYLE 10:

- PIN 1. CATHODE
- ANODE
- ANODE-CATHODE

Notes

Notes

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