

Small Signal Switching Diodes, High Voltage



FEATURES

- Silicon epitaxial planar diodes
- Saving space
- Hermetic sealed parts
- Fits onto SOD-323/SOT-23 footprints
- Electrical data identical with the devices BAV100 to BAV103, BAV200 to BAV203
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

MECHANICAL DATA

Case: MicroMELF

Weight: approx. 12 mg

Cathode band color: black

Packaging codes/options:

TR3/10K per 13" reel (8 mm tape), 10K/box

TR/2.5K per 7" reel (8 mm tape), 12.5K/box

APPLICATIONS

- General purposes

PARTS TABLE

| PART | TYPE DIFFERENTIATION | ORDERING CODE | INTERNAL CONSTRUCTION | REMARKS |
|--------|--------------------------|-------------------------|-----------------------|---------------|
| BAV300 | $V_{RRM} = 60\text{ V}$ | BAV300-TR3 or BAV300-TR | Single diode | Tape and reel |
| BAV301 | $V_{RRM} = 120\text{ V}$ | BAV301-TR3 or BAV301-TR | Single diode | Tape and reel |
| BAV302 | $V_{RRM} = 200\text{ V}$ | BAV302-TR3 or BAV302-TR | Single diode | Tape and reel |
| BAV303 | $V_{RRM} = 250\text{ V}$ | BAV303-TR3 or BAV303-TR | Single diode | Tape and reel |

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
|---------------------------------|--|--------|-----------|-------|------|
| Repetitive peak reverse voltage | | BAV300 | V_{RRM} | 60 | V |
| | | BAV301 | V_{RRM} | 120 | V |
| | | BAV302 | V_{RRM} | 200 | V |
| | | BAV303 | V_{RRM} | 250 | V |
| Reverse voltage | | BAV300 | V_R | 50 | V |
| | | BAV301 | V_R | 100 | V |
| | | BAV302 | V_R | 150 | V |
| | | BAV303 | V_R | 200 | V |
| Forward continuous current | | | I_F | 250 | mA |
| Peak forward surge current | $t_p = 1\text{ s}, T_j = 25\text{ }^{\circ}\text{C}$ | | I_{FSM} | 1 | A |
| Forward peak current | $f = 50\text{ Hz}$ | | I_{FM} | 625 | mA |



| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | |
|--|---|------------|---------------|--------------------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| Thermal resistance junction to ambient air | Mounted on epoxy-glass hard tissue, fig. 4 35 μm copper clad, 0.9 mm^2 copper area per electrode | R_{thJA} | 500 | K/W |
| Junction temperature | | T_j | 175 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | - 65 to + 175 | $^{\circ}\text{C}$ |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | | |
|---|---|--------|------------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | $I_F = 100\text{ mA}$ | | V_F | | | 1000 | mV |
| Reverse current | $V_R = 50\text{ V}$ | BAV300 | I_R | | | 100 | nA |
| | $V_R = 100\text{ V}$ | BAV301 | I_R | | | 100 | nA |
| | $V_R = 150\text{ V}$ | BAV302 | I_R | | | 100 | nA |
| | $V_R = 200\text{ V}$ | BAV303 | I_R | | | 100 | nA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 50\text{ V}$ | BAV300 | I_R | | | 15 | μA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 100\text{ V}$ | BAV301 | I_R | | | 15 | μA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 150\text{ V}$ | BAV302 | I_R | | | 15 | μA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 200\text{ V}$ | BAV303 | I_R | | | 15 | μA |
| Breakdown voltage | $I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$ | BAV300 | $V_{(BR)}$ | 60 | | | V |
| | | BAV301 | $V_{(BR)}$ | 120 | | | V |
| | | BAV302 | $V_{(BR)}$ | 200 | | | V |
| | | BAV303 | $V_{(BR)}$ | 250 | | | V |
| Diode capacitance | $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ | | C_D | | 1.5 | | pF |
| Differential forward resistance | $I_F = 10\text{ mA}$ | | r_f | | 5 | | Ω |
| Reverse recovery time | $I_F = I_R = 30\text{ mA}$, $i_R = 3\text{ mA}$, $R_L = 100\text{ }\Omega$ | | t_{rr} | | | 50 | ns |

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

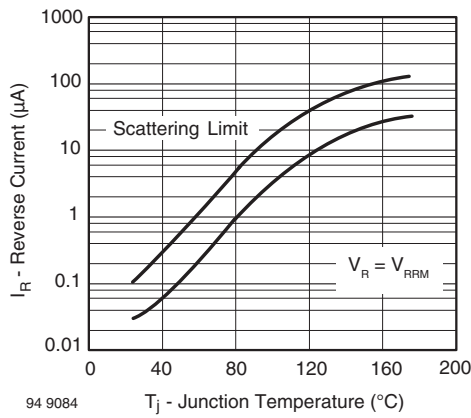


Fig. 1 - Reverse Current vs. Junction Temperature

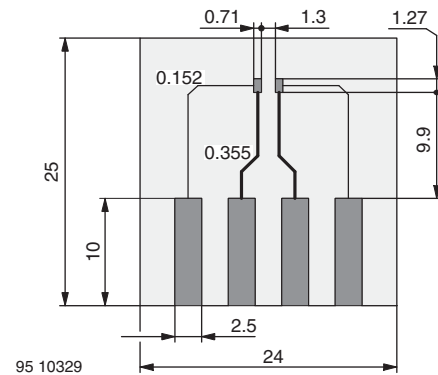


Fig. 4 - Board for R_{thJA} Definition (in mm)

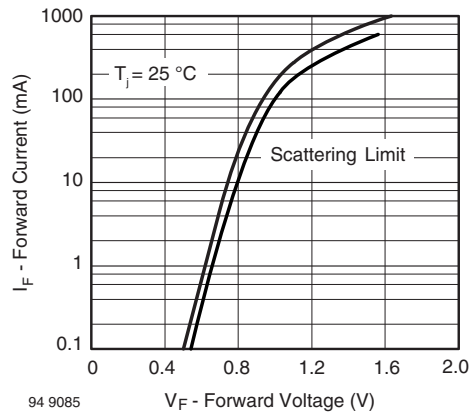


Fig. 2 - Forward Current vs. Forward Voltage

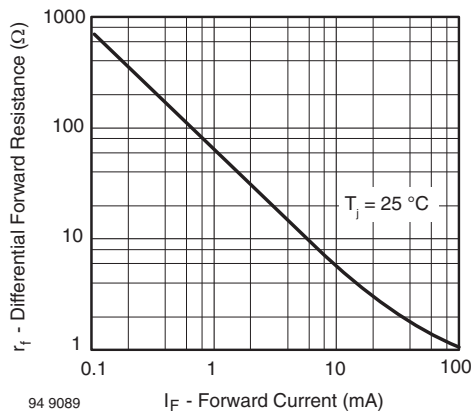
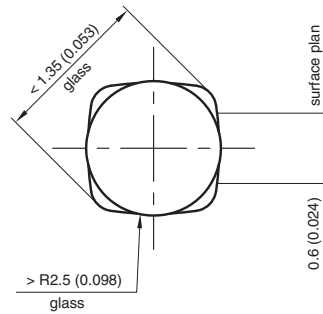
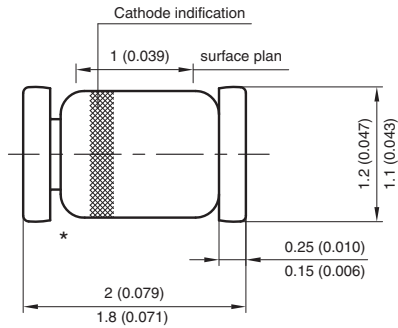


Fig. 3 - Differential Forward Resistance vs. Forward Current

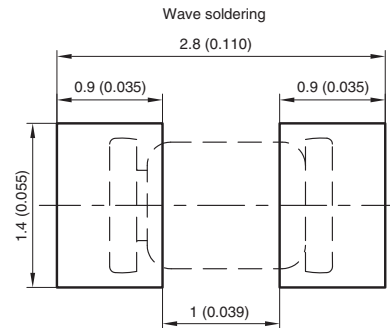
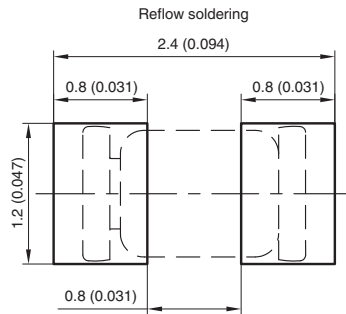


PACKAGE DIMENSIONS in millimeters (inches): **MicromELF**



* The gap between plug and glass can be either on cathode or anode side

Foot print recommendation:



Created - Date: 26.July.1996
 Rev. 13 - Date: 07.June.2006
 Document no.:6.560-5007.01-4
 96 12072



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