



## Small Signal Switching Diodes, High Voltage



### FEATURES

- Silicon epitaxial planar diodes
- AEC-Q101 qualified
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS  
COMPLIANT  
HALOGEN  
FREE

### APPLICATIONS

- General purposes

### MECHANICAL DATA

Case: DO-35

Weight: approx. 125 mg

Cathode band color: black

Packaging codes/options:

TR/10K per 13" reel (52 mm tape), 50K/box

TAP/10K per ammpack (52 mm tape), 50K/box

| PARTS TABLE |                          |                       |              |                       |                        |
|-------------|--------------------------|-----------------------|--------------|-----------------------|------------------------|
| PART        | TYPE DIFFERENTIATION     | ORDERING CODE         | TYPE MARKING | INTERNAL CONSTRUCTION | REMARKS                |
| BAV17       | $V_{RRM} = 25\text{ V}$  | BAV17-TR or BAV17-TAP | BAV17        | Single diode          | Tape and reel/ammopack |
| BAV18       | $V_{RRM} = 60\text{ V}$  | BAV18-TR or BAV18-TAP | BAV18        | Single diode          | Tape and reel/ammopack |
| BAV19       | $V_{RRM} = 120\text{ V}$ | BAV19-TR or BAV19-TAP | BAV19        | Single diode          | Tape and reel/ammopack |
| BAV20       | $V_{RRM} = 200\text{ V}$ | BAV20-TR or BAV20-TAP | BAV20        | Single diode          | Tape and reel/ammopack |
| BAV21       | $V_{RRM} = 250\text{ V}$ | BAV21-TR or BAV21-TAP | BAV21        | Single diode          | Tape and reel/ammopack |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |  |       |           |       |      |
|---|--|-------|-----------|-------|------|
| PARAMETER   | TEST CONDITION                                       | PART  | SYMBOL    | VALUE | UNIT |
| Repetitive peak reverse voltage   |  | BAV17 | $V_{RRM}$ | 25    | V    |
|   |  | BAV18 | $V_{RRM}$ | 60    | V    |
|   |  | BAV19 | $V_{RRM}$ | 120   | V    |
|   |  | BAV20 | $V_{RRM}$ | 200   | V    |
|   |  | BAV21 | $V_{RRM}$ | 250   | V    |
| Reverse voltage   |  | BAV17 | $V_R$     | 20    | V    |
|   |  | BAV18 | $V_R$     | 50    | V    |
|   |  | BAV19 | $V_R$     | 100   | V    |
|   |  | BAV20 | $V_R$     | 150   | V    |
|   |  | BAV21 | $V_R$     | 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  | $f = 50\text{ Hz}$                                   |       | $I_{FRM}$ | 625   | mA   |
| Power dissipation   |  |       | $P_{tot}$ | 500   | mW   |



| THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                     |                   |               |      |
|--|-------------------------------------|-------------------|---------------|------|
| PARAMETER  | TEST CONDITION                      | SYMBOL            | VALUE         | UNIT |
| Thermal resistance junction to ambient air                                     | l = 4 mm, T <sub>L</sub> = constant | R <sub>thJA</sub> | 300           | K/W  |
| Junction temperature   |                                     | T <sub>j</sub>    | 175           | °C   |
| Storage temperature range  |                                     | T <sub>stg</sub>  | - 65 to + 175 | °C   |

| ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |  |                |                   |      |      |      |      |
|---|--|----------------|-------------------|------|------|------|------|
| PARAMETER   | TEST CONDITION   | PART           | SYMBOL            | MIN. | TYP. | MAX. | UNIT |
| Forward voltage   | I <sub>F</sub> = 100 mA  |                | V <sub>F</sub>    |      |      | 1    | V    |
| Reverse current   | V <sub>R</sub> = 20 V  | BAV17          | I <sub>R</sub>    |      |      | 100  | nA   |
|   | V <sub>R</sub> = 50 V  | BAV18          | I <sub>R</sub>    |      |      | 100  | nA   |
|   | V <sub>R</sub> = 100 V   | BAV19          | I <sub>R</sub>    |      |      | 100  | nA   |
|   | V <sub>R</sub> = 150 V   | BAV20          | I <sub>R</sub>    |      |      | 100  | nA   |
|   | V <sub>R</sub> = 200 V   | BAV21          | I <sub>R</sub>    |      |      | 100  | nA   |
|   | T <sub>j</sub> = 100 °C, V <sub>R</sub> = 20 V   | BAV17          | I <sub>R</sub>    |      |      | 15   | µA   |
|   | T <sub>j</sub> = 100 °C, V <sub>R</sub> = 50 V   | BAV18          | I <sub>R</sub>    |      |      | 15   | µA   |
|   | T <sub>j</sub> = 100 °C, V <sub>R</sub> = 100 V  | BAV19          | I <sub>R</sub>    |      |      | 15   | µA   |
|   | T <sub>j</sub> = 100 °C, V <sub>R</sub> = 150 V  | BAV20          | I <sub>R</sub>    |      |      | 15   | µA   |
| T <sub>j</sub> = 100 °C, V <sub>R</sub> = 200 V                                   | BAV21  | I <sub>R</sub> |                   |      | 15   | µA   |      |
| Breakdown voltage   | I <sub>R</sub> = 5 µA, t <sub>p</sub> /T = 0.01, t <sub>p</sub> = 0.3 ms                 | BAV17          | V <sub>(BR)</sub> | 25   |      |      | V    |
|   |  | BAV18          | V <sub>(BR)</sub> | 60   |      |      | V    |
|   |  | BAV19          | V <sub>(BR)</sub> | 120  |      |      | V    |
|   |  | BAV20          | V <sub>(BR)</sub> | 200  |      |      | V    |
|   |  | BAV21          | V <sub>(BR)</sub> | 250  |      |      | V    |
| Diode capacitance   | V <sub>R</sub> = 0 V, f = 1 MHz,   |                | C <sub>D</sub>    |      | 1.5  |      | pF   |
| Differential forward resistance   | I <sub>F</sub> = 10 mA   |                | r <sub>f</sub>    |      | 5    |      | Ω    |
| Reverse recovery time   | I <sub>F</sub> = I <sub>R</sub> = 30 mA, i <sub>R</sub> = 3 mA<br>R <sub>L</sub> = 100 Ω |                | t <sub>rr</sub>   |      |      | 50   | ns   |

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)

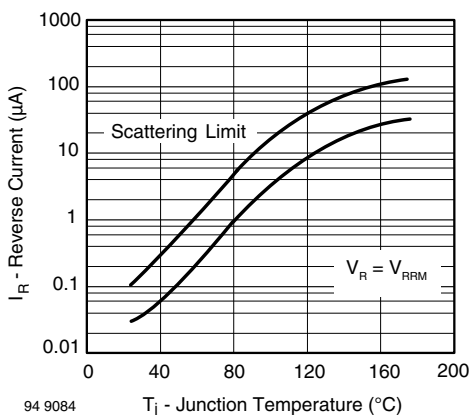


Fig. 1 - Reverse Current vs. Junction Temperature

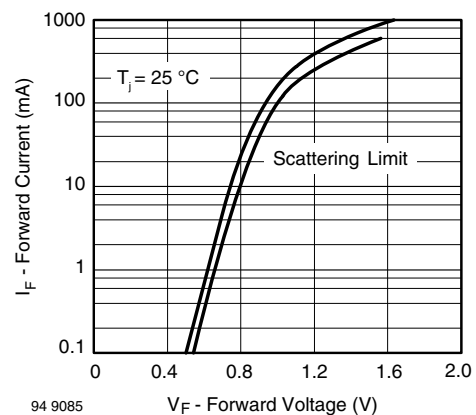


Fig. 2 - Forward Current vs. Forward Voltage

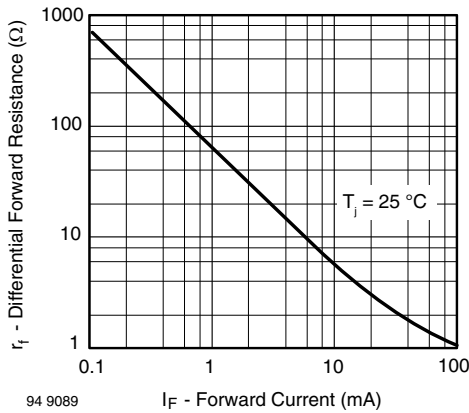
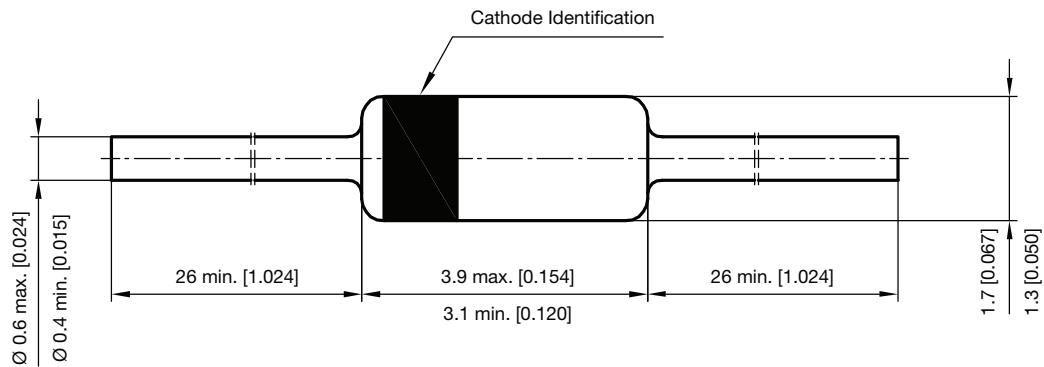


Fig. 3 - Differential Forward Resistance vs. Forward Current

**PACKAGE DIMENSIONS** in millimeters (inches): **DO-35**



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