



Small Signal Switching Diodes, High Voltage



FEATURES

- Silicon epitaxial planar diodes
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912

APPLICATIONS

- General purposes



RoHS
COMPLIANT
HALOGEN
FREE

LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: DO-35 (DO-204AH)

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 | CIRCUIT CONFIGURATION | REMARKS |
|-------|--------------------------|-----------------------|--------------|-----------------------|-------------------------|
| BAV17 | $V_{RRM} = 25\text{ V}$ | BAV17-TR or BAV17-TAP | BAV17 | Single | Tape and reel / ammpack |
| BAV18 | $V_{RRM} = 60\text{ V}$ | BAV18-TR or BAV18-TAP | BAV18 | Single | Tape and reel / ammpack |
| BAV19 | $V_{RRM} = 120\text{ V}$ | BAV19-TR or BAV19-TAP | BAV19 | Single | Tape and reel / ammpack |
| BAV20 | $V_{RRM} = 200\text{ V}$ | BAV20-TR or BAV20-TAP | BAV20 | Single | Tape and reel / ammpack |
| BAV21 | $V_{RRM} = 250\text{ V}$ | BAV21-TR or BAV21-TAP | BAV21 | Single | Tape and reel / ammpack |

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 _{amb} = 25 °C, unless otherwise specified) | | | | |
|--|-------------------------------------|-------------------|-------------|------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| Thermal resistance junction to ambient air | l = 4 mm, T _L = constant | R _{thJA} | 300 | K/W |
| Junction temperature | | T _j | 175 | °C |
| Storage temperature range | | T _{stg} | -65 to +175 | °C |

| ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | | | | |
|---|--|-------|-------------------|------|------|------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | I _F = 100 mA | | V _F | | | 1 | V |
| Reverse current | V _R = 20 V | BAV17 | I _R | | | 100 | nA |
| | V _R = 50 V | BAV18 | I _R | | | 100 | nA |
| | V _R = 100 V | BAV19 | I _R | | | 100 | nA |
| | V _R = 150 V | BAV20 | I _R | | | 100 | nA |
| | V _R = 200 V | BAV21 | I _R | | | 100 | nA |
| | T _j = 100 °C, V _R = 20 V | BAV17 | I _R | | | 15 | μA |
| | T _j = 100 °C, V _R = 50 V | BAV18 | I _R | | | 15 | μA |
| | T _j = 100 °C, V _R = 100 V | BAV19 | I _R | | | 15 | μA |
| | T _j = 100 °C, V _R = 150 V | BAV20 | I _R | | | 15 | μA |
| Breakdown voltage | I _R = 5 μA, t _p /T = 0.01, t _p = 0.3 ms | BAV17 | V _(BR) | 25 | | | V |
| | | BAV18 | V _(BR) | 60 | | | V |
| | | BAV19 | V _(BR) | 120 | | | V |
| | | BAV20 | V _(BR) | 200 | | | V |
| | | BAV21 | V _(BR) | 250 | | | V |
| Diode capacitance | V _R = 0 V, f = 1 MHz, | | C _D | | 1.5 | | pF |
| Differential forward resistance | I _F = 10 mA | | r _f | | 5 | | Ω |
| Reverse recovery time | I _F = I _R = 30 mA, I _R = 3 mA R _L = 100 Ω | | t _{rr} | | | 50 | ns |

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

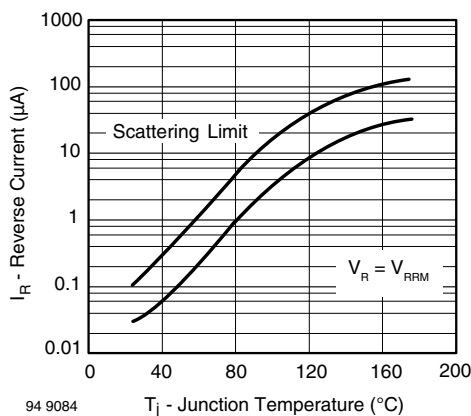


Fig. 1 - Reverse Current vs. Junction Temperature

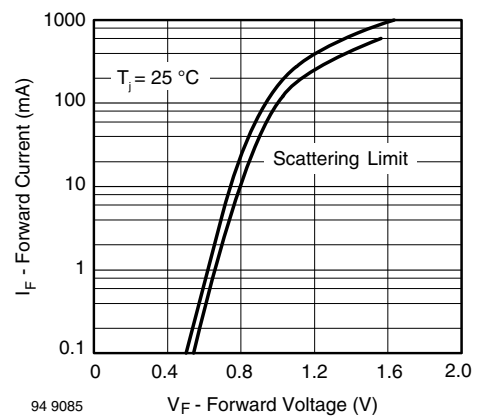


Fig. 2 - Forward Current vs. Forward Voltage

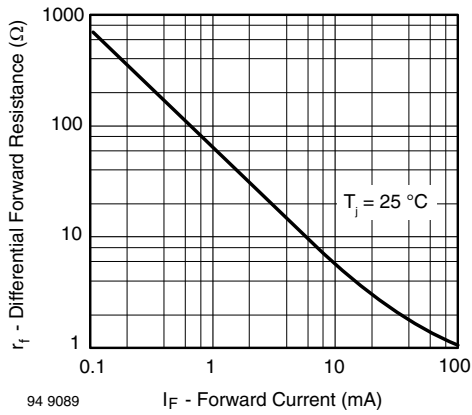
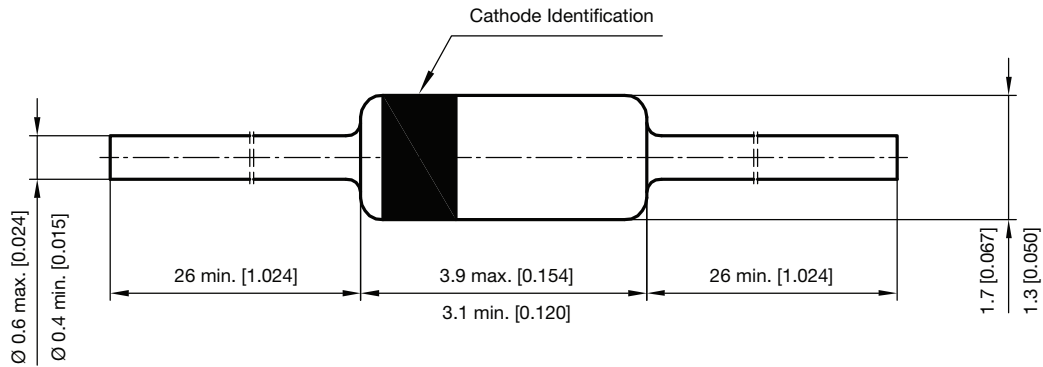


Fig. 3 - Differential Forward Resistance vs. Forward Current

PACKAGE DIMENSIONS in millimeters (inches): **DO-35 (DO-204AH)**



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