



BAV19WS-V, BAV20WS-V, BAV21WS-V

Vishay Semiconductors

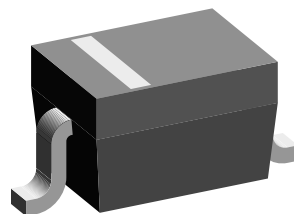
Small Signal Switching Diodes, High Voltage

Features

- Silicon Epitaxial Planar Diodes
- For general purpose
- These diodes are also available in other case styles including: the DO-35 case with the type designation BAV19 - BAV21, the MiniMELF case with the type designation BAV100 - BAV103, the SOT-23 case with the type designation BAS19 to BAS21 and the SOD-123 case with the type designation BAV19W-V to BAV21W-V
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT



20145

Mechanical Data

Case: SOD-323

Weight: approx. 5 mg

Packaging Codes/Options:

GS18/10K per 13" reel (8 mm tape), 10K/box

GS08/3K per 7" reel (8 mm tape), 15K/box

Parts Table

| Part | Type differentiation | Ordering code | Type Marking | Remarks |
|-----------|----------------------|----------------------------------|--------------|---------------|
| BAV19WS-V | $V_R = 100\text{ V}$ | BAV19WS-V-GS18 or BAV19WS-V-GS08 | A8 | Tape and reel |
| BAV20WS-V | $V_R = 150\text{ V}$ | BAV20WS-V-GS18 or BAV20WS-V-GS08 | A9 | Tape and reel |
| BAV21WS-V | $V_R = 200\text{ V}$ | BAV21WS-V-GS18 or BAV21WS-V-GS08 | AA | Tape and reel |

Absolute Maximum Ratings

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

| Parameter | Test condition | Part | Symbol | Value | Unit |
|---|---|-----------|-------------|-------------------|------|
| Continuous reverse voltage | | BAV19WS-V | V_R | 100 | V |
| | | BAV20WS-V | V_R | 150 | V |
| | | BAV21WS-V | V_R | 200 | V |
| Repetitive peak reverse voltage | | BAV19WS-V | V_{RRM} | 120 | V |
| | | BAV20WS-V | V_{RRM} | 200 | V |
| | | BAV21WS-V | V_{RRM} | 250 | V |
| Forward continuous current | | | I_F | 250 ¹⁾ | mA |
| Rectified current (average) half wave rectification with resist. load | | | $I_{F(AV)}$ | 200 ¹⁾ | mA |
| Repetitive peak forward current | $f \geq 50\text{ Hz}$, $\theta = 180^{\circ}$ | | I_{FRM} | 625 ¹⁾ | mA |
| Surge forward current | $t < 1\text{ s}$, $T_j = 25\text{ }^{\circ}\text{C}$ | | I_{FSM} | 1 | A |
| Power dissipation | | | P_{tot} | 200 ¹⁾ | mW |

Note

¹⁾ Valid provided that leads are kept at ambient temperature

Thermal Characteristics

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

| Parameter | Test condition | Symbol | Value | Unit |
|--|----------------|------------|-----------------------------|--------------------|
| Thermal resistance junction to ambient air | | R_{thJA} | 650 ¹⁾ | K/W |
| Junction temperature | | T_j | 150 ¹⁾ | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | - 65 to + 150 ¹⁾ | $^{\circ}\text{C}$ |

Note

¹⁾ Valid provided that leads are kept at ambient temperature

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 | | | 1 | V |
| | $I_F = 200\text{ mA}$ | | V_F | | | 1.25 | V |
| Leakage current | $V_R = 100\text{ V}$ | BAV19WS-V | I_R | | | 100 | nA |
| | $V_R = 100\text{ V}$, $T_j = 100\text{ }^{\circ}\text{C}$ | BAV19WS-V | I_R | | | 15 | μA |
| | $V_R = 150\text{ V}$ | BAV20WS-V | I_R | | | 100 | nA |
| | $V_R = 150\text{ V}$, $T_j = 100\text{ }^{\circ}\text{C}$ | BAV20WS-V | I_R | | | 15 | μA |
| | $V_R = 200\text{ V}$ | BAV21WS-V | I_R | | | 100 | nA |
| | $V_R = 200\text{ V}$, $T_j = 100\text{ }^{\circ}\text{C}$ | BAV21WS-V | I_R | | | 15 | μA |
| Dynamic forward resistance | $I_F = 10\text{ mA}$ | | r_f | | 5 | | Ω |
| Diode capacitance | $V_R = 0$, $f = 1\text{ MHz}$ | | C_D | | 1.5 | | pF |
| Reverse recovery time | $I_F = 30\text{ mA}$, $I_R = 30\text{ mA}$, $i_R = 3\text{ mA}$, $R_L = 100\text{ }\Omega$ | | t_{rr} | | | 50 | ns |



Typical Characteristics

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

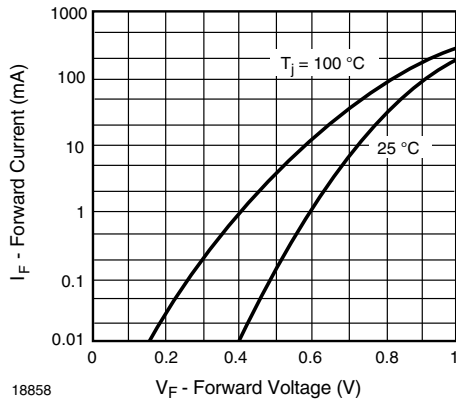


Figure 1. Forward Current vs. Forward Voltage

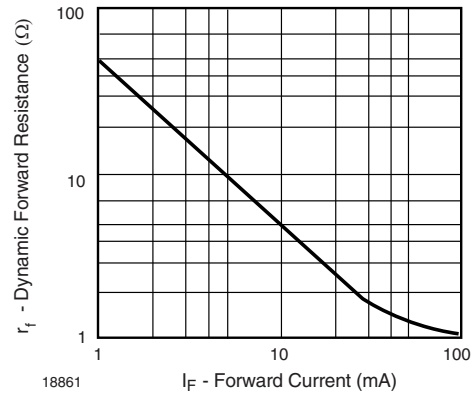


Figure 4. Dynamic Forward Resistance vs. Forward Current

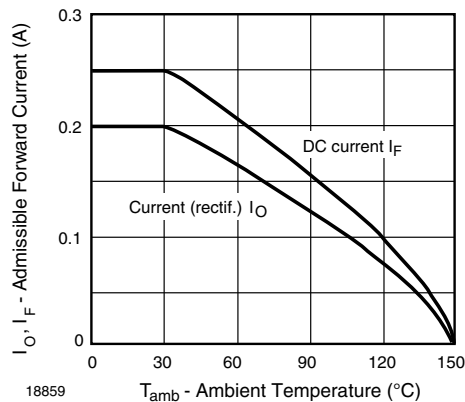


Figure 2. Admissible Forward Current vs. Ambient Temperature

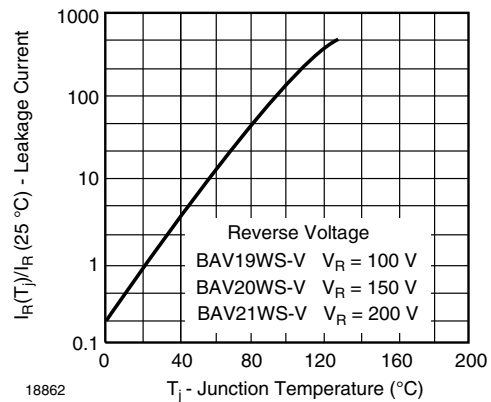


Figure 5. Leakage Current vs. Junction Temperature

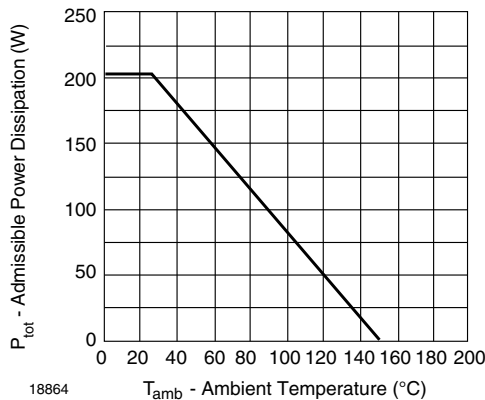


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

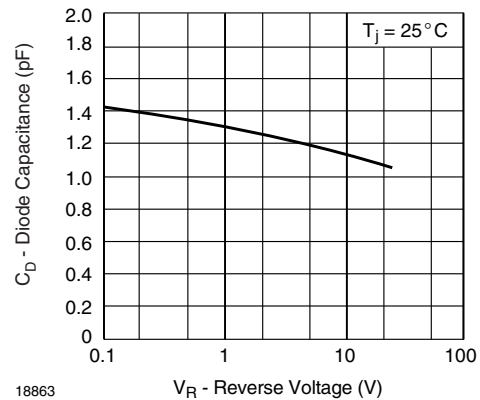


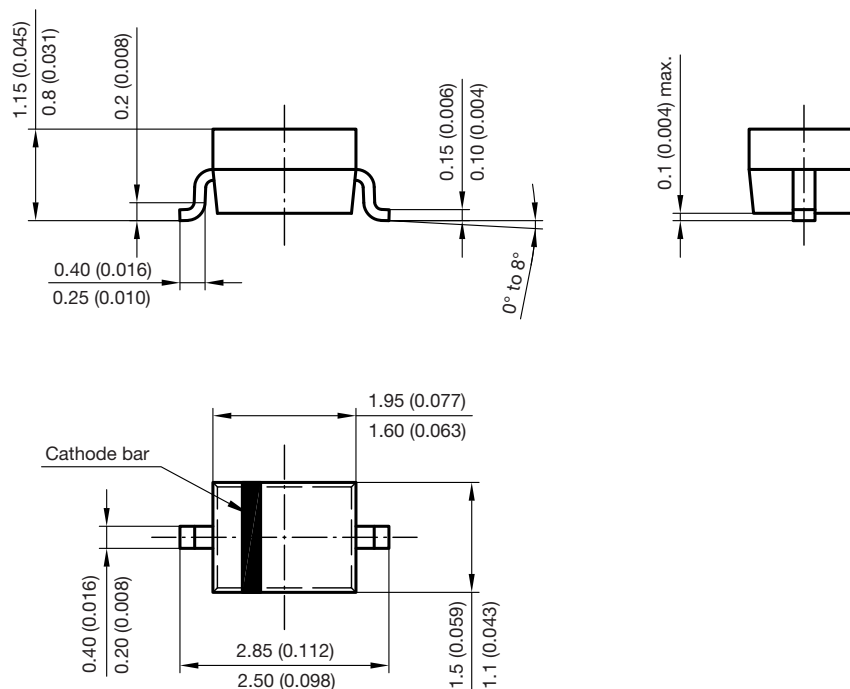
Figure 6. Capacitance vs. Reverse Voltage

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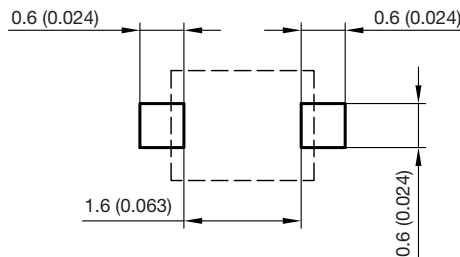


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Package Dimensions in millimeters (inches): **SOD-323**



Foot print recommendation:



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17443



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