

BAV19WS-G, BAV20WS-G, BAV21WS-G

Vishay Semiconductors

Small Signal Switching Diodes, High Voltage

DESIGN SUPPORT TOOLS click logo to get started



MECHANICAL DATA

Case: SOD-323

Weight: approx. 4 mg

Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box

FEATURES

- Silicon epitaxial planar diodes
- For general purpose
- AEC-Q101 qualified
- Base P/N-G3 green, commercial grade
- Base P/N-HG3 green, AEC-Q101 qualified (part number available on request)
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>





(5-2008)

PARTS TABLE TYPE TYPE CIRCUIT PART **ORDERING CODE** REMARKS CONFIGURATION DIFFERENTIATION MARKING BAV19WS-G V_R = 100 V BAV19WS-G3-08 or BAV19WS-G3-18 AS Single Tape and reel BAV20WS-G V_R = 150 V BAV20WS-G3-08 or BAV20WS-G3-18 AT Single Tape and reel BAV21WS-G V_R = 200 V BAV21WS-G3-08 or BAV21WS-G3-18 AU Single Tape and reel

| ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified) | | | | | | | | |
|--|---|-----------|--------------------|-------|------|--|--|--|
| PARAMETER | TEST CONDITION | SYMBOL | SYMBOL | VALUE | UNIT | | | |
| Continuous reverse voltage | | BAV19WS-G | V _R | 100 | V | | | |
| | | BAV20WS-G | V _R | 150 | V | | | |
| | | BAV21WS-G | V _R | 200 | V | | | |
| Repetitive peak reverse voltage | | BAV19WS-G | V _{RRM} | 120 | V | | | |
| | | BAV20WS-G | V _{RRM} | 200 | V | | | |
| | | BAV21WS-G | V _{RRM} | 250 | V | | | |
| Forward continuous current ⁽¹⁾ | | | IF | 250 | mA | | | |
| Rectified current (average) half wave rectification with resistive load ⁽¹⁾ | | | I _{F(AV)} | 200 | mA | | | |
| Repetitive peak forward current ⁽¹⁾ | $f \ge 50 \text{ Hz}, \theta = 180^{\circ}$ | | I _{FRM} | 625 | mA | | | |
| Surge forward current | t < 1 s, T _J = 25 °C | | I _{FSM} | 1 | А | | | |
| Power dissipation | | | P _{tot} | 200 | mW | | | |

Note

⁽¹⁾ Valid provided that leads are kept at ambient temperature

| THERMAL CHARACTERISTICS ($T_{amb} = 25 \text{ °C}$, unless otherwise specified) | | | | | | | | |
|--|----------------|-------------------|-------------|------|--|--|--|--|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT | | | | |
| Thermal resistance junction to ambient air | | R _{thJA} | 625 | K/W | | | | |
| Thermal resistance junction to lead | | R _{thJL} | 450 | K/W | | | | |
| Junction temperature | | Tj | 150 | °C | | | | |
| Storage temperature range | | T _{stg} | -65 to +150 | °C | | | | |
| Operating temperature range | | T _{op} | -55 to +150 | °C | | | | |

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| 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 | |
| | I _F = 200 mA | | V _F | | | 1.25 | V | |
| Reverse leakage current | V _R = 100 V | BAV19WS-G | I _R | | | 100 | nA | |
| | $V_R = 100 V, T_j = 100 °C$ | BAV19WS-G | I _R | | | 15 | μA | |
| | V _R = 150 V | BAV20WS-G | I _R | | | 100 | nA | |
| | $V_{R} = 150 \text{ V}, \text{ T}_{j} = 100 ^{\circ}\text{C}$ | BAV20WS-G | I _R | | | 15 | μA | |
| | V _R = 200 V | BAV21WS-G | I _R | | | 100 | nA | |
| | $V_{R} = 200 \text{ V}, \text{ T}_{j} = 100 ^{\circ}\text{C}$ | BAV21WS-G | I _R | | | 15 | μA | |
| Dynamic Forward resistance | I _F = 10 mA | | r _f | | 5 | | Ω | |
| Diode capacitance | $V_R = 0 V$, f = 1 MHz | | CD | | | 1.5 | pF | |
| Reverse recovery time | I_{F} = 30 mA, I_{R} = 30 mA, i_{R} = 3 mA, R_{L} = 100 Ω | | t _{rr} | | | 50 | ns | |

TYPICAL CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

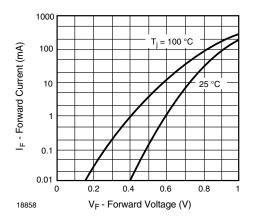


Fig. 1 - Forward Current vs. Forward Voltage

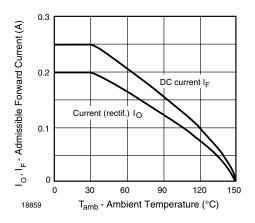


Fig. 2 - Admissible Forward Current vs. Ambient Temperature

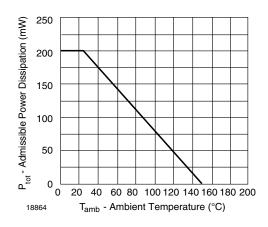


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

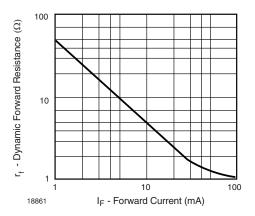


Fig. 4 - Dynamic Forward Resistance vs. Forward Current

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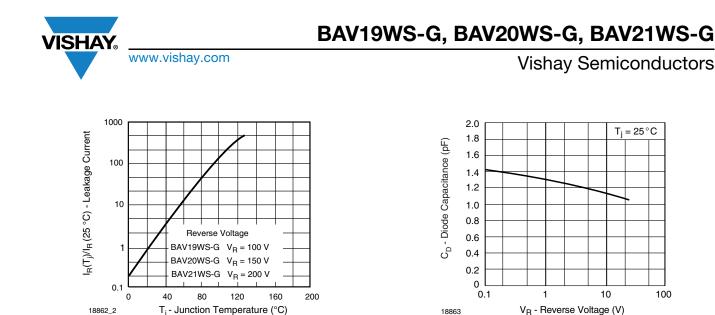
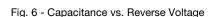


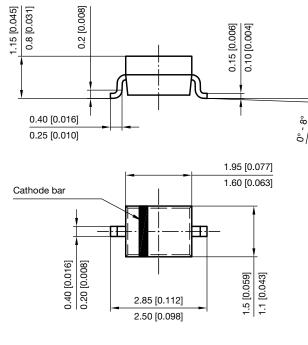
Fig. 5 - Leakage Current vs. Junction Temperature



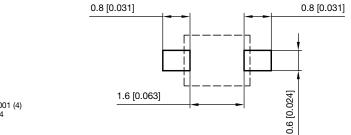
0.1 [0.004] max.

100

PACKAGE DIMENSIONS in millimeters (inches): SOD-323



Footprint recommendation:



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