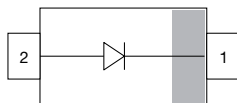
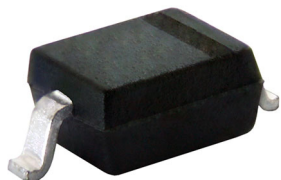


## Small Signal Switching Diodes, High Voltage



### FEATURES

- Silicon epitaxial planar diodes
- For general purpose
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level (MSL) 1
- Base P/N-G3 - RoHS-compliant, commercial grade
- Base P/N-HG3\_A - RoHS-compliant, AEC-Q101 qualified (part number available on request)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

AUTOMOTIVE  
GRADE  
Available



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### LINKS TO ADDITIONAL RESOURCES



### 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

### PARTS TABLE

| PART    | TYPE DIFFERENTIATION | ORDERING CODE    | AEC-Q101 QUALIFIED | TYPE MARKING | CIRCUIT CONFIGURATION | TAPED UNITS PER REEL              | MINIMUM ORDER QUANTITY |
|---------|----------------------|------------------|--------------------|--------------|-----------------------|-----------------------------------|------------------------|
| BAV19WS | $V_R = 100\text{ V}$ | BAV19WS-G3-08    | No                 | 8A           | Single                | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|         |                      | BAV19WS-HG3_A-08 | Yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         |                      | BAV19WS-G3-18    | No                 |              |                       |                                   |                        |
|         |                      | BAV19WS-HG3_A-18 | Yes                |              |                       |                                   |                        |
| BAV20WS | $V_R = 150\text{ V}$ | BAV20WS-G3-08    | No                 | 9A           | Single                | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|         |                      | BAV20WS-HG3_A-08 | Yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         |                      | BAV20WS-G3-18    | No                 |              |                       |                                   |                        |
|         |                      | BAV20WS-HG3_A-18 | Yes                |              |                       |                                   |                        |
| BAV21WS | $V_R = 200\text{ V}$ | BAV21WS-G3-08    | No                 | 7A           | Single                | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|         |                      | BAV21WS-HG3_A-08 | Yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         |                      | BAV21WS-G3-18    | No                 |              |                       |                                   |                        |
|         |                      | BAV21WS-HG3_A-18 | Yes                |              |                       |                                   |                        |

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

| PARAMETER  | TEST CONDITION  | PART    | SYMBOL      | VALUE | UNIT |
|--|---|---------|-------------|-------|------|
| Continuous reverse voltage   |   | BAV19WS | $V_R$       | 100   | V    |
|  |   | BAV20WS | $V_R$       | 150   | V    |
|  |   | BAV21WS | $V_R$       | 200   | V    |
| Repetitive peak reverse voltage  |   | BAV19WS | $V_{RRM}$   | 120   | V    |
|  |   | BAV20WS | $V_{RRM}$   | 200   | V    |
|  |   | BAV21WS | $V_{RRM}$   | 250   | V    |
| DC Forward current <sup>(1)</sup>  |   |         | $I_F$       | 250   | mA   |
| Rectified current (average) half wave rectification with resist. load <sup>(1)</sup> |   |         | $I_{F(AV)}$ | 200   | mA   |
| Repetitive peak forward current <sup>(1)</sup>                                       | $f \geq 50\text{ Hz}$ , $\theta = 180^{\circ}$        |         | $I_{FRM}$   | 625   | mA   |
| Surge forward current  | $t < 1\text{ s}$ , $T_j = 25\text{ }^{\circ}\text{C}$ |         | $I_{FSM}$   | 1     | A    |
| Power dissipation <sup>(1)</sup>   |   |         | $P_{tot}$   | 200   | mW   |

### Note

<sup>(1)</sup> Infinite heatsink



| <b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                    |            |             |                    |
|---|--------------------|------------|-------------|--------------------|
| PARAMETER   | TEST CONDITION     | SYMBOL     | VALUE       | UNIT               |
| Thermal resistance junction to lead   | Infinite heat sink | $R_{thJL}$ | 625         | K/W                |
| Junction temperature  |                    | $T_j$      | 150         | $^{\circ}\text{C}$ |
| Storage temperature range   |                    | $T_{stg}$  | -65 to +150 | $^{\circ}\text{C}$ |
| Operating temperature range   |                    | $T_{op}$   | -55 to +150 | $^{\circ}\text{C}$ |

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |  |         |          |      |      |               |
|--|--|---------|----------|------|------|---------------|
| PARAMETER  | TEST CONDITION   | PART    | SYMBOL   | 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 | $I_R$    |      | 100  | nA            |
|  | $V_R = 100\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$                              | BAV19WS | $I_R$    |      | 15   | $\mu\text{A}$ |
|  | $V_R = 150\text{ V}$   | BAV20WS | $I_R$    |      | 100  | nA            |
|  | $V_R = 150\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$                              | BAV20WS | $I_R$    |      | 15   | $\mu\text{A}$ |
|  | $V_R = 200\text{ V}$   | BAV21WS | $I_R$    |      | 100  | nA            |
|  | $V_R = 200\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$                              | BAV21WS | $I_R$    |      | 15   | $\mu\text{A}$ |
| Dynamic forward resistance   | $I_F = 10\text{ mA}$   |         | $r_f$    | 5    |      | $\Omega$      |
| 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)

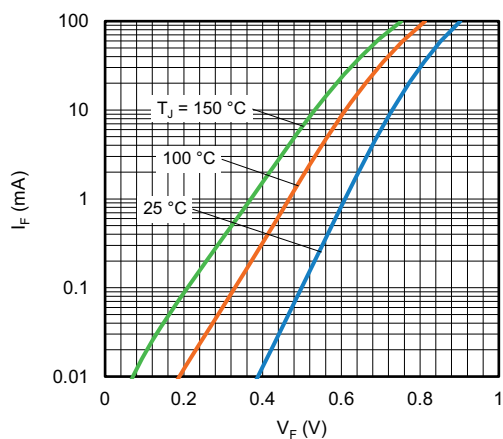


Fig. 1 - Typical Forward Current vs. Forward Voltage

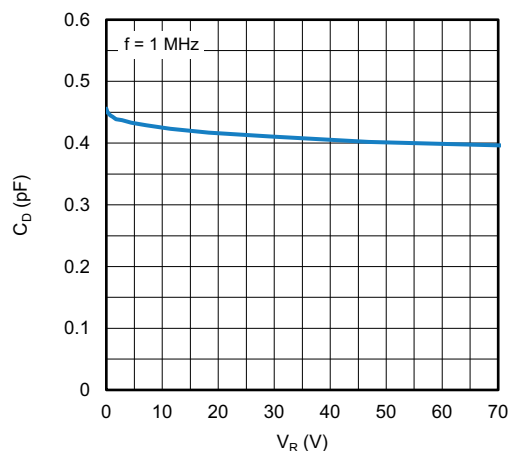


Fig. 3 - Typical Capacitance vs. Reverse Voltage

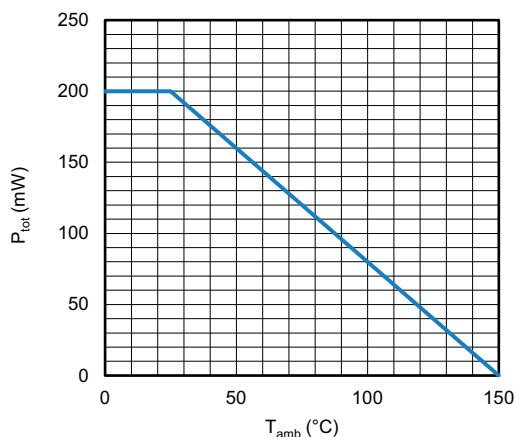


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

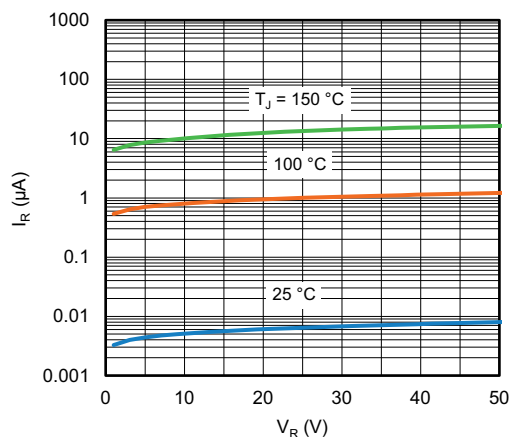
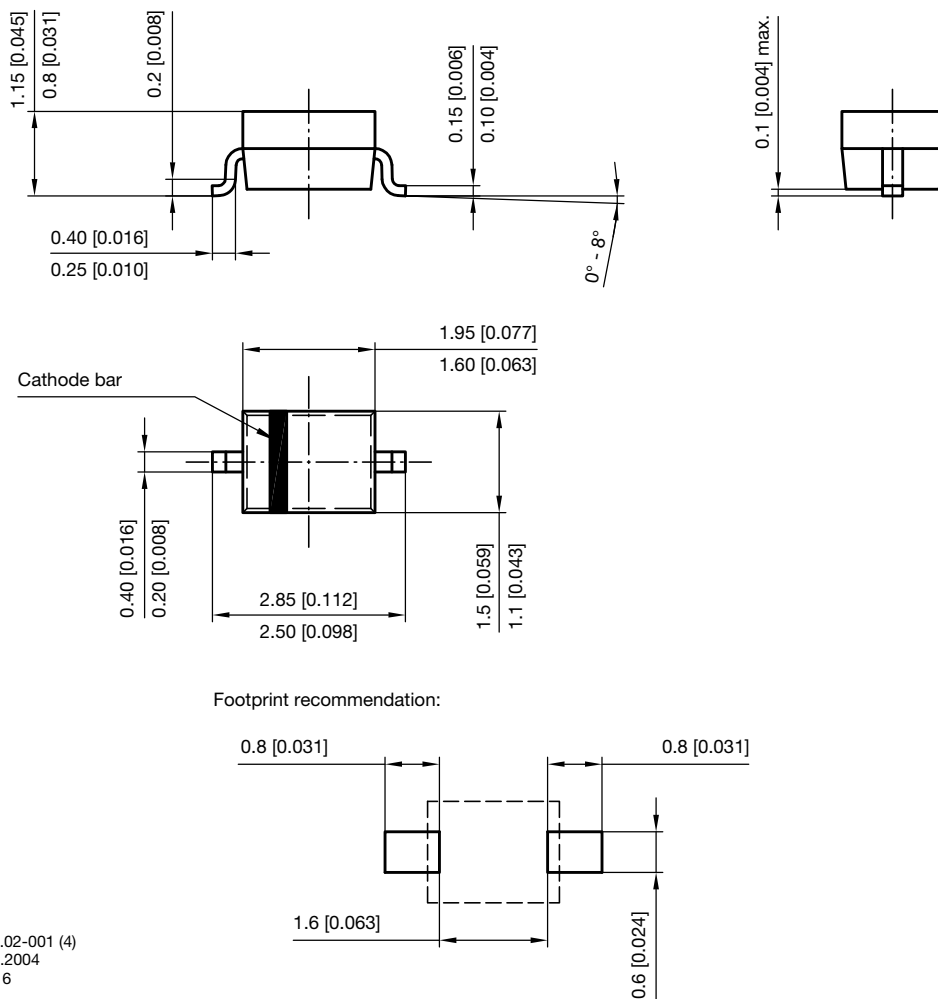


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



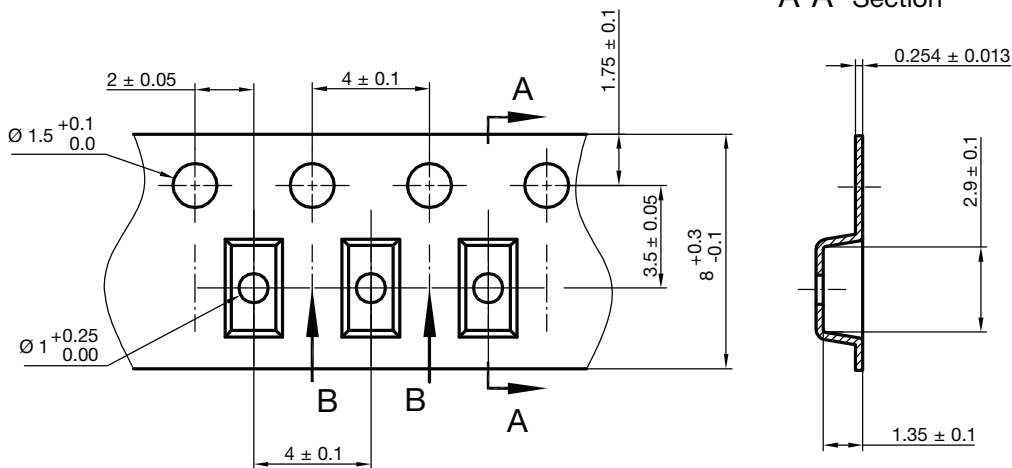
**PACKAGE DIMENSIONS** in millimeters (inches) **SOD-323**



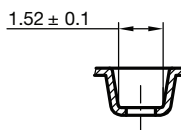
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Created - Date: 24.August.2004  
Rev. 6 - Date: 23.Sept.2016  
22771



**CARRIER TAPE SOD-323**

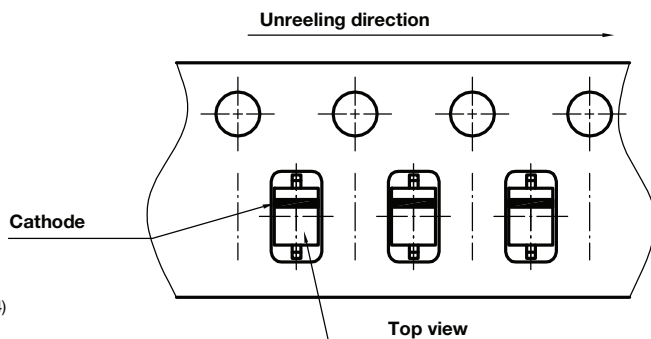


**B-B Section**



Document no.: S8-V-3717.07-002 (4)  
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22824

**ORIENTATION IN CARRIER TAPE SOD-323**



Document no.: S8-V-3717.07-003 (4)  
Created - Date: 09. Feb. 2010  
22772



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