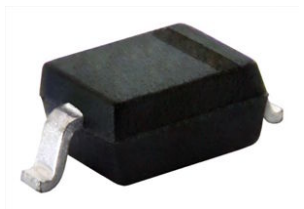


## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### MECHANICAL DATA

**Case:** SOD-323

**Weight:** approx. 4.3 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    | ORDERING CODE                    | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS       |
|---------|----------------------------------|-----------------------|--------------|---------------|
| BAS16WS | BAS16WS-E3-08 or BAS16WS-E3-18   | Single diode          | A6           | Tape and reel |
|         | BAS16WS-HE3-08 or BAS16WS-HE3-18 |                       |              |               |

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

| PARAMETER                           | TEST CONDITION      | SYMBOL    | VALUE | UNIT |
|-------------------------------------|---------------------|-----------|-------|------|
| Reverse voltage                     |                     | $V_R$     | 75    | V    |
| Repetitive peak reverse voltage     |                     | $V_{RRM}$ | 100   | V    |
| Forward current (continuous)        |                     | $I_F$     | 250   | mA   |
| Non-repetitive peak forward current | $t = 1 \mu\text{s}$ | $I_{FSM}$ | 2     | A    |
|                                     | $t = 1 \text{ ms}$  | $I_{FSM}$ | 1     | A    |
|                                     | $t = 1 \text{ s}$   | $I_{FSM}$ | 0.5   | A    |
| Power dissipation                   |                     | $P_{tot}$ | 200   | mW   |

### THERMAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                                  | TEST CONDITION | SYMBOL     | VALUE         | UNIT               |
|--------------------------------------------|----------------|------------|---------------|--------------------|
| Thermal resistance junction to ambient air |                | $R_{thJA}$ | 650           | 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                                                                            | SYMBOL   | MIN. | TYP. | MAX.  | UNIT          |
| Forward voltage                                                                                          | $I_F = 1\text{ mA}$                                                                       | $V_F$    |      |      | 0.715 | V             |
|                                                                                                          | $I_F = 10\text{ mA}$                                                                      | $V_F$    |      |      | 0.855 | V             |
|                                                                                                          | $I_F = 50\text{ mA}$                                                                      | $V_F$    |      |      | 1     | V             |
|                                                                                                          | $I_F = 150\text{ mA}$                                                                     | $V_F$    |      |      | 1.250 | V             |
| Leakage current                                                                                          | $V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$                                    | $I_R$    |      |      | 30    | $\mu\text{A}$ |
|                                                                                                          | $V_R = 75\text{ V}$                                                                       | $I_R$    |      |      | 1     | $\mu\text{A}$ |
|                                                                                                          | $V_R = 75\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$                                    | $I_R$    |      |      | 50    | $\mu\text{A}$ |
| Diode capacitance                                                                                        | $V_R = 0, f = 1\text{ MHz}$                                                               | $C_D$    |      |      | 2     | pF            |
| Reverse recovery time                                                                                    | $I_F = 10\text{ mA}, I_R = 10\text{ mA},$<br>$i_R = 1\text{ mA}, R_L = 100\text{ }\Omega$ | $t_{rr}$ |      |      | 6     | ns            |

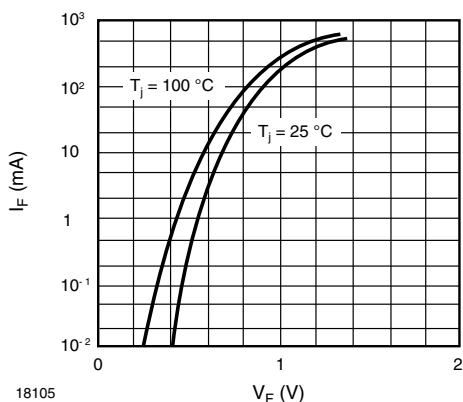
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Characteristics

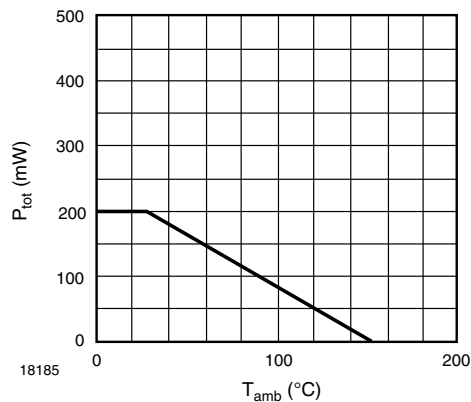


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

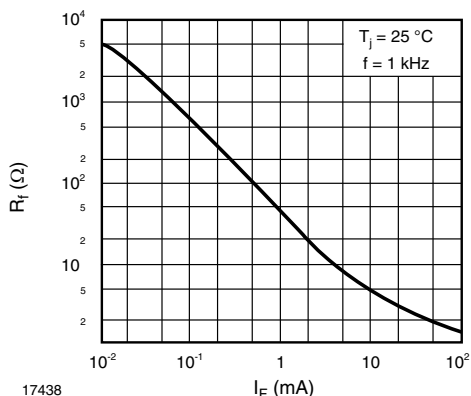


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

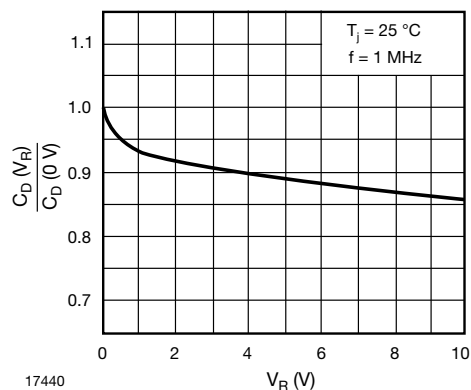


Fig. 4 - Relative Capacitance vs. Reverse Voltage

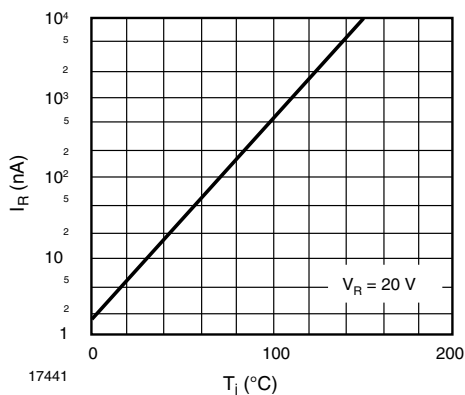
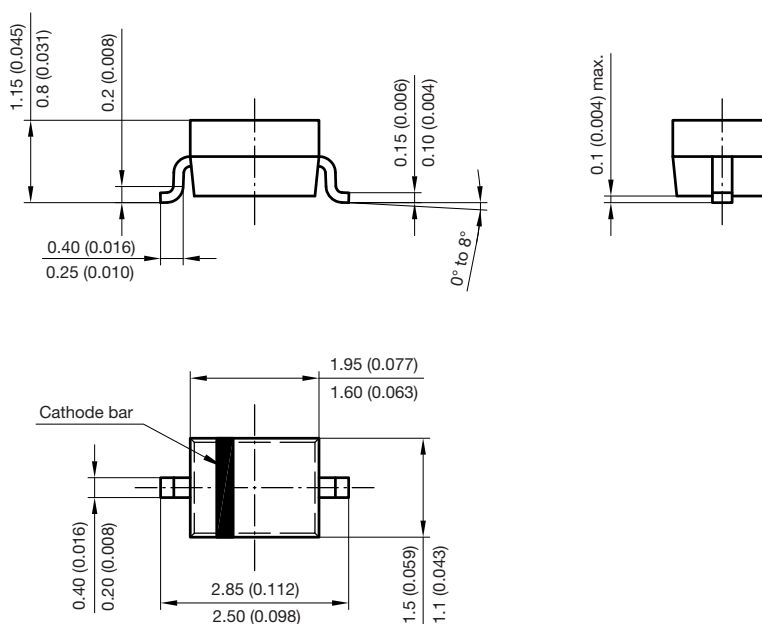
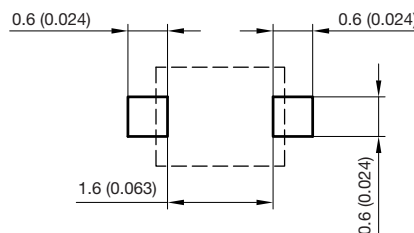


Fig. 5 - Leakage Current vs. Junction Temperature

### PACKAGE DIMENSIONS in millimeters (inches): SOD-323



Foot print recommendation:



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17443



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