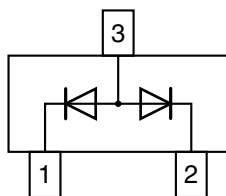


## Small Signal Switching Diode, Dual



### FEATURES

- Silicon epitaxial planar diode
- Fast switching dual diode with common anode
- 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:** SOT-23

**Weight:** approx. 8.8 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       |
|-------|------------------------------|--------------------------|--------------|---------------|
| BAW56 | BAW56-E3-08 or BAW56-E3-18   | Dual diodes common anode | JD           | Tape and reel |
|       | BAW56-HE3-08 or BAW56-HE3-18 |                          |              |               |

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

| PARAMETER                                                                                  | TEST CONDITION        | SYMBOL          | VALUE | UNIT |
|--------------------------------------------------------------------------------------------|-----------------------|-----------------|-------|------|
| Repetitive peak reverse voltage<br>= working peak reverse voltage<br>= DC blocking voltage |                       | $V_R = V_{RRM}$ | 70    | V    |
| Forward continuous current                                                                 |                       | $I_F$           | 250   | mA   |
| Non repetitive peak forward current                                                        | $t_p = 1 \mu\text{s}$ | $I_{FSM}$       | 2     | A    |
|                                                                                            | $t_p = 1 \text{ ms}$  | $I_{FSM}$       | 1     | A    |
|                                                                                            | $t_p = 1 \text{ s}$   | $I_{FSM}$       | 0.5   | A    |
| Power dissipation <sup>(1)</sup>                                                           |                       | $P_{tot}$       | 350   | mW   |

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

| PARAMETER                                  | TEST CONDITION | SYMBOL     | VALUE         | UNIT               |
|--------------------------------------------|----------------|------------|---------------|--------------------|
| Thermal resistance junction to ambient air |                | $R_{thJA}$ | 430           | 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 | $^{\circ}\text{C}$ |

#### Note

<sup>(1)</sup> Device on fiberglass substrate, see layout

| <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             |
|                                                                                                          | $I_F = 150\text{ mA}$                                                                        | $V_F$    |      |      | 1.25  | V             |
| Reverse current                                                                                          | $V_R = 70\text{ V}$                                                                          | $I_R$    |      |      | 2500  | nA            |
|                                                                                                          | $V_R = 70\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$                                       | $I_R$    |      |      | 100   | $\mu\text{A}$ |
|                                                                                                          | $V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$                                       | $I_R$    |      |      | 30    | $\mu\text{A}$ |
| Diode capacitance                                                                                        | $V_F = V_R = 0\text{ V}, f = 1\text{ MHz}$                                                   | $C_D$    |      |      | 2     | pF            |
| Reverse recovery time                                                                                    | $I_F = 10\text{ mA}$ to $i_R = 1\text{ mA}$ ,<br>$V_R = 6\text{ V}, R_L = 100\text{ }\Omega$ | $t_{rr}$ |      |      | 6     | ns            |

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

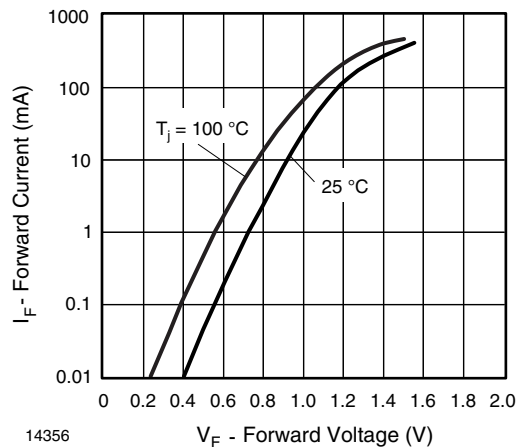


Fig. 1 - Forward Current vs. Forward Voltage

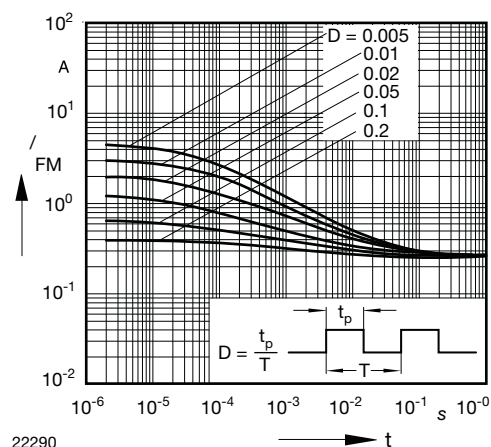
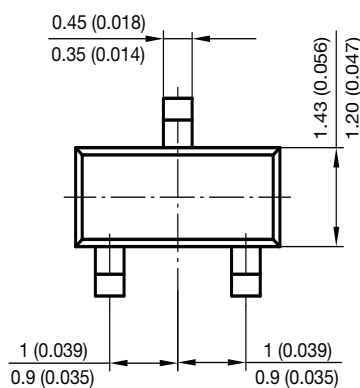
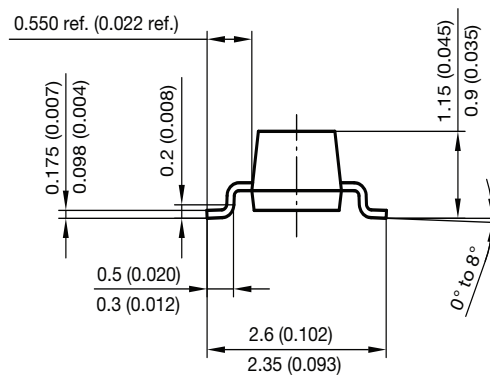
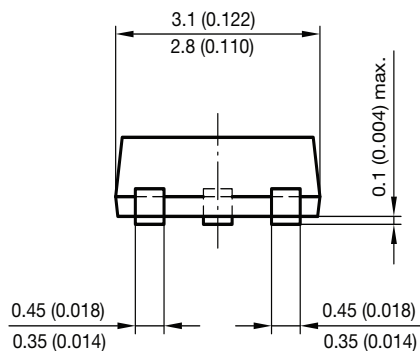


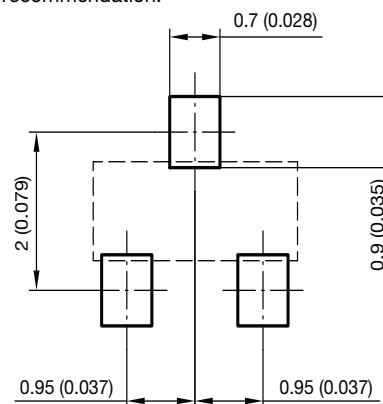
Fig. 2 - Peak Forward Current  $I_{FM} = f(t_p)$



**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**



Foot print recommendation:



Document no.: 6.541-5014.01-4  
Rev. 8 - Date: 23.Sept.2009  
17418



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