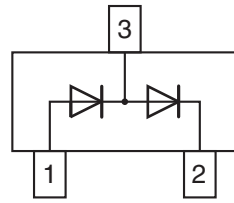
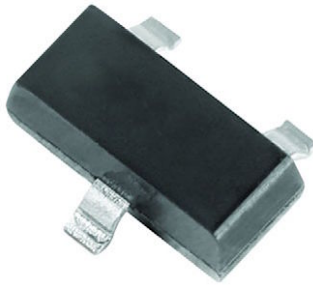


Small Signal Switching Diode, Dual in Series



18109

FEATURES

- Fast switching speed
- High conductance
- Surface mount package ideally suited for automatic insertion
- Connected in series
- AEC-Q101 qualified available
- 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


RoHS
COMPLIANT

DESIGN SUPPORT TOOLS click logo to get started


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 | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
| BAV99 | BAV99-E3-08 or BAV99-E3-18 | Dual serial | JE | Tape and reel |
| | BAV99-HE3-08 or BAV99-HE3-18 | | | |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | |
|---|---|---------------------------|-------|------|--|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT | |
| Non repetitive peak reverse voltage | | V_{RM} | 100 | V | |
| Repetitive peak reverse voltage = working peak reverse voltage = DC blocking voltage | | $V_{RRM} = V_{RWM} = V_R$ | 70 | | |
| Peak forward surge current | $t_p = 1\text{ s}$ | I_{FSM} | 1 | A | |
| | $t_p = 1\text{ }\mu\text{s}$ | | 4.5 | | |
| Average forward current | Half wave rectification with resistive load and $f \geq 50\text{ MHz}$, on ceramic substrate 10 mm x 8 mm x 0.7 mm | $I_{F(AV)}$ | 150 | mA | |
| Forward current | On ceramic substrate 10 mm x 8 mm x 0.7 mm | I_F | 250 | | |
| Power dissipation | On ceramic substrate 10 mm x 8 mm x 0.7 mm | P_{tot} | 300 | mW | |

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | |
|--|---|-----------------|-------------|--------------------|--|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT | |
| Junction ambient | On ceramic substrate 10 mm x 8 mm x 0.7 mm | R_{thJA} | 430 | K/W | |
| Junction and storage temperature range | | $T_J = T_{stg}$ | -55 to +150 | $^{\circ}\text{C}$ | |
| Operating temperature range | | T_{op} | -55 to +150 | $^{\circ}\text{C}$ | |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|--|--|----------|------|------|-------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | $I_F = 1\text{ mA}$ | V_F | | | 0.715 | V |
| | $I_F = 10\text{ mA}$ | | | | 0.855 | V |
| | $I_F = 50\text{ mA}$ | | | | 1 | V |
| | $I_F = 150\text{ mA}$ | | | | 1.25 | V |
| Reverse current | $V_R = 70\text{ V}$ | I_R | | | 2500 | nA |
| | $V_R = 70\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$ | | | | 50 | μA |
| | $V_R = 25\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$ | | | | 30 | μA |
| Diode capacitance | $V_R = 0, f = 1\text{ MHz}$ | C_D | | | 1.5 | pF |
| Reverse recovery time | $I_F = 10\text{ mA}$ to $i_R = 1\text{ mA}$, $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$ | t_{rr} | | | 6 | ns |

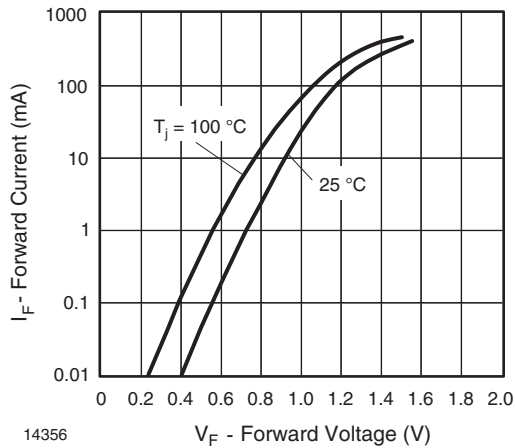
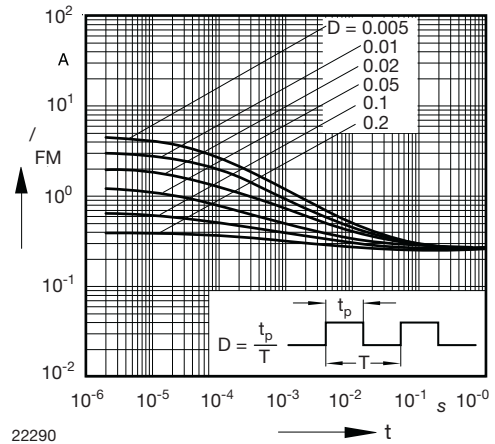
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


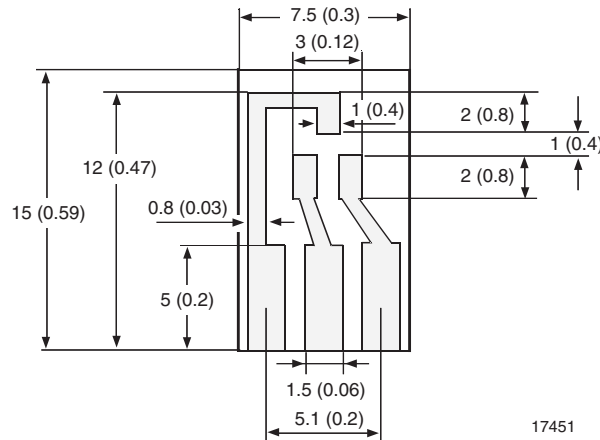
Fig. 1 - Forward Current vs. Forward Voltage


 Fig. 2 - Peak forward current $/_{FM} = f(t_p)$
LAYOUT FOR R_{thJA} TEST

Thickness:

Fiberglass 1.5 mm (0.059 inches)

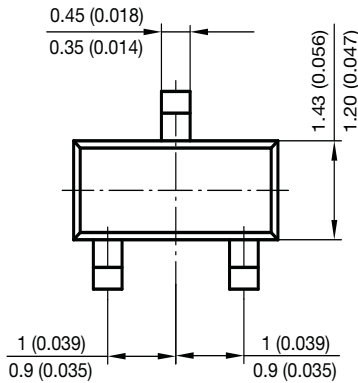
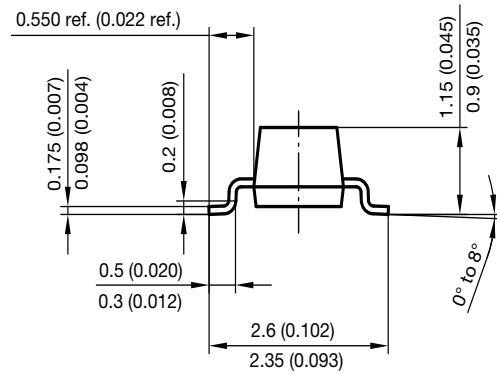
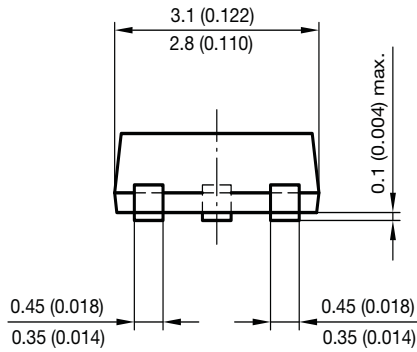
Copper leads 0.3 mm (0.012 inches)



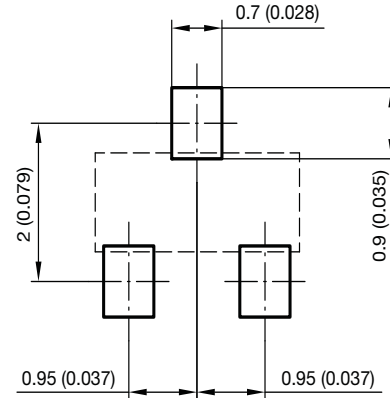
17451



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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