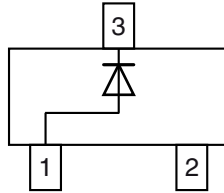


Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Ultra fast switching speed
- Surface mount package ideally suited for automatic insertion
- High conductance
- 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

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 |
|-------|------------------------------|-----------------------|--------------|---------------|
| BAS16 | BAS16-E3-08 or BAS16-E3-18 | Single diode | A6 | Tape and reel |
| | BAS16-HE3-08 or BAS16-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 | | $V_{RRM} = V_{RWM} = V_R$ | 75 | V |
| Peak forward surge current | $t_p = 1\text{ s}$ | I_{FSM} | 1 | A |
| | $t_p = 1\text{ }\mu\text{s}$ | I_{FSM} | 2 | A |
| Average forward current | Half wave rectification with resistive load and $f \geq 50\text{ MHz}$, on ceramic substrate 8 mm x 10 mm x 0.7 mm | $I_{F(AV)}$ | 150 | mA |
| Forward current | On ceramic substrate 8 mm x 10 mm x 0.7 mm | I_F | 300 | mA |
| Power dissipation | On ceramic substrate 8 mm x 10 mm x 0.7 mm | P_{tot} | 350 | mW |

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

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|---|-----------------|-------------|--------------------|
| Junction ambient | On ceramic substrate 8 mm x 10 mm x 0.7 mm | R_{thJA} | 357 | 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 |
| | $I_F = 10\text{ mA}$ | V_F | | | 855 | mV |
| | $I_F = 50\text{ mA}$ | V_F | | | 1 | V |
| | $I_F = 150\text{ mA}$ | V_F | | | 1.25 | V |
| Reverse current | $V_R = 75\text{ V}$ | I_R | | | 1 | μA |
| | $V_R = 75\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | | 50 | μA |
| | $V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$ | I_R | | | 30 | μA |
| Diode capacitance | $V_R = 0, f = 1\text{ MHz}$ | C_D | | | 4 | 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 |

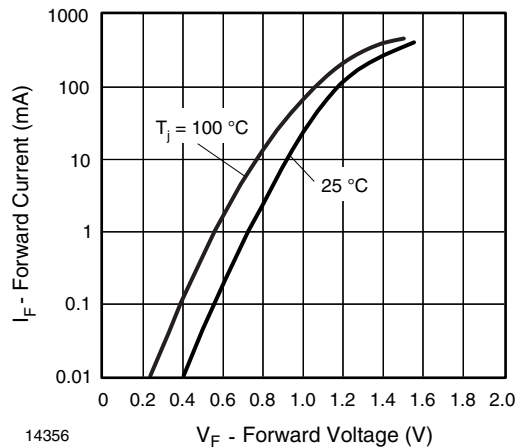
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

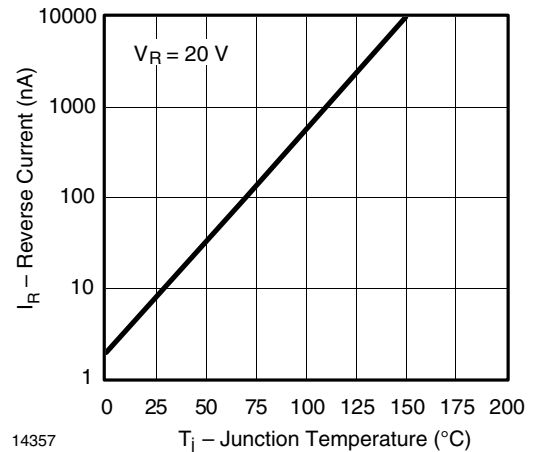
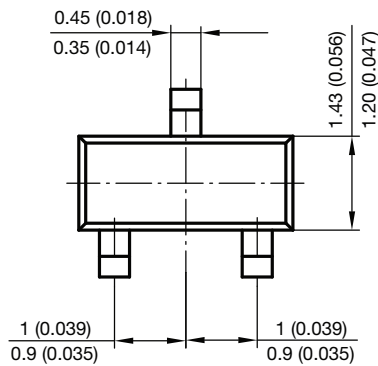
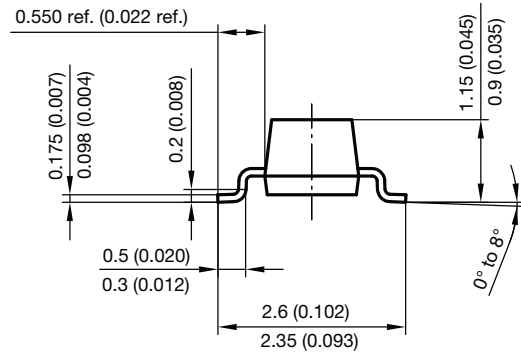
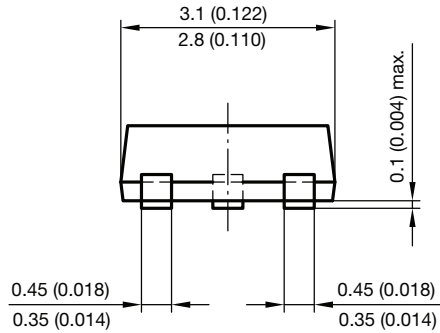


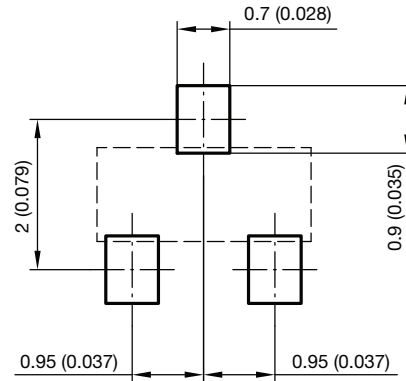
Fig. 2 - Reverse Current vs. Junction Temperature



PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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17418



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