# Small Signal Fast Switching Diode

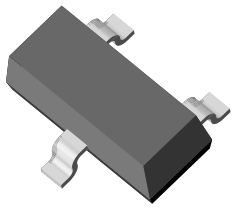
## Features

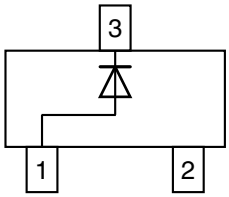
- Silicon Epitaxial Planar Diode
- Ultra fast switching speed
- Surface mount package ideally suited for automatic insertion
- High conductance
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb-free

e3

RoHS COMPLIANT



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## Mechanical Data

**Case:** SOT-23
**Weight:** approx. 8.0 mg
**Polarity:** cathode band
**Packaging Codes/Options:**
GS18 / 10 k per 13" reel (8 mm tape), 10 k/box
GS08 / 3 k per 7" reel (8 mm tape), 15 k/box

## Parts Table

| Part | Ordering code | Marking | Remarks |
|---|---|---|---|
| BAS16-V | BAS16-V-GS18 or BAS16-V_GS08 | A6 | Tape and Reel |

## Absolute Maximum Ratings

$T_{amb}$ = 25 °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 s | $I_{FSM}$ | 1 | A |
| | $t_p$ =1 µs | $I_{FSM}$ | 2 | A |
| Average forward current | Half wave rectification with resistive load and f ≥ 50 MHz, on ceramic substrate 8 mm x10 mm x 0.7 mm | $I_{FAV}$ | 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 °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 | °C |

## Electrical Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Forward voltage | $I_F$ = 1 mA | $V_F$ | | | 715 | mV |
| | $I_F$ = 10 mA | $V_F$ | | | 855 | mV |
| | $I_F$ = 50 mA | $V_F$ | | | 1 | V |
| | $I_F$ = 150 mA | $V_F$ | | | 1.25 | V |
| Reverse current | $V_R$ = 75 V | $I_R$ | | | 1 | µA |
| | $V_R$ = 75 V, $T_j$ = 150 °C | $I_R$ | | | 50 | µA |
| | $V_R$ = 25 V, $T_j$ = 150 °C | $I_R$ | | | 30 | µA |
| Diode capacitance | $V_R$ = 0, f = 1 MHz | $C_D$ | | | 4 | pF |
| Reverse recovery time | $I_F$ = 10 mA to $I_R$ = 1 mA, $V_R$ = 6 V, $R_L$ = 100 Ω | $t_{rr}$ | | | 6 | ns |

## Typical Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

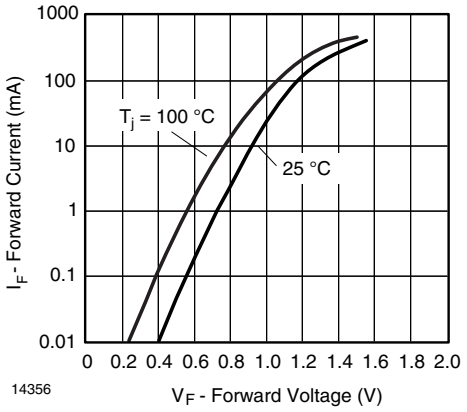



Figure 1. Forward Current vs. Forward Voltage

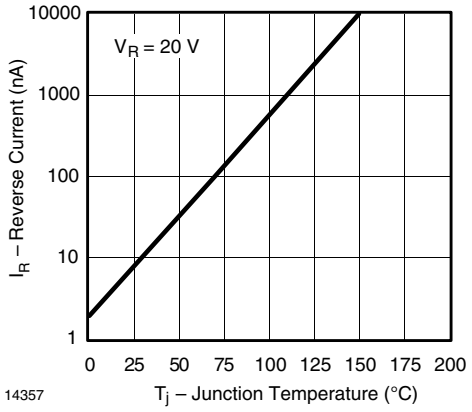
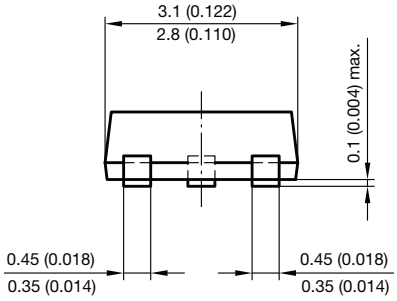
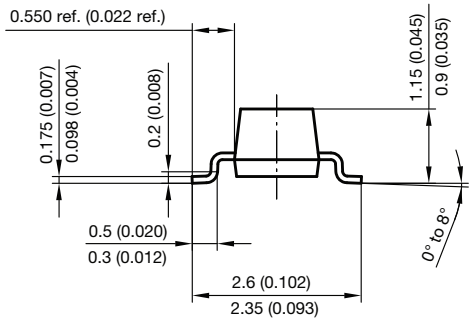
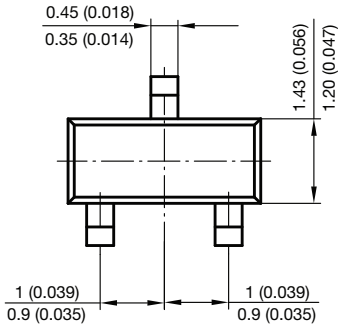



Figure 2. Reverse Current vs. Junction Temperature

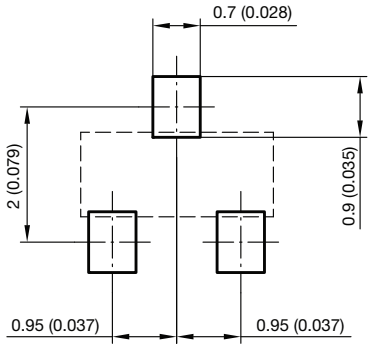
## **Package Dimensions** in millimeters (inches): **SOT-23**




Foot print recommendation:

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