

# BAS16H, SBAS16H

## Switching Diode

### Features

- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS

| Rating                     | Symbol          | Value | Unit |
|----------------------------|-----------------|-------|------|
| Continuous Reverse Voltage | $V_R$           | 75    | Vdc  |
| Peak Forward Current       | $I_F$           | 200   | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500   | mAdc |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### THERMAL CHARACTERISTICS

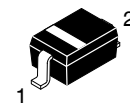
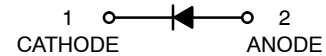
| Characteristic   | Symbol          | Max           | Unit                       |
|--|-----------------|---------------|----------------------------|
| Total Device Dissipation FR-5 Board<br>(Note 1)<br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 200<br>1.57   | mW<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient   | $R_{\theta JA}$ | 635           | $^\circ\text{C}/\text{W}$  |
| Junction and Storage Temperature   | $T_J, T_{stg}$  | -55 to<br>150 | $^\circ\text{C}$           |

1. FR-4 Minimum Pad.



**ON Semiconductor®**

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**SOD-323  
CASE 477  
STYLE 1**

### MARKING DIAGRAM



A6 = Specific Device Code  
M = Date Code

### ORDERING INFORMATION

| Device     | Package              | Shipping†           |
|------------|----------------------|---------------------|
| BAS16HT1G  | SOD-323<br>(Pb-Free) | 3000 / Tape & Reel  |
| SBAS16HT1G | SOD-323<br>(Pb-Free) | 3000 / Tape & Reel  |
| SBAS16HT3G | SOD-323<br>(Pb-Free) | 10000 / Tape & Reel |

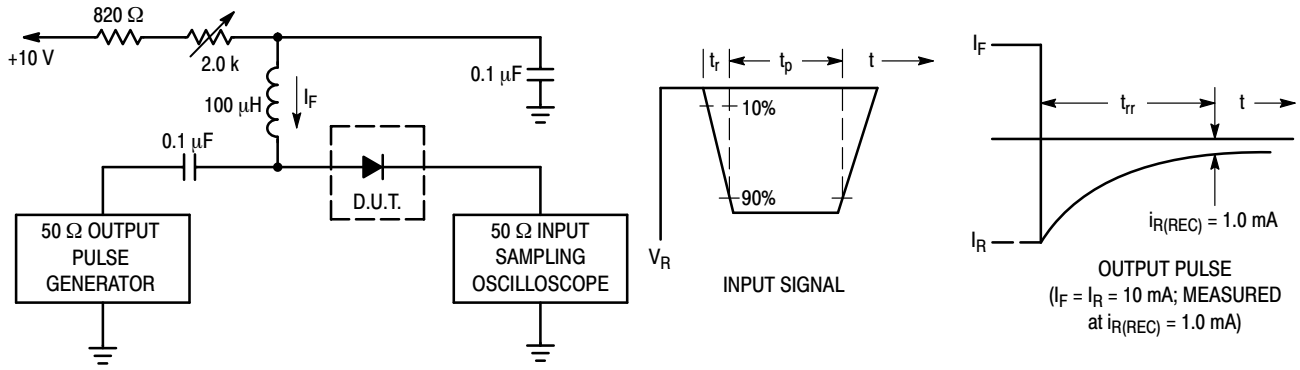
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# BAS16H, SBAS16H

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

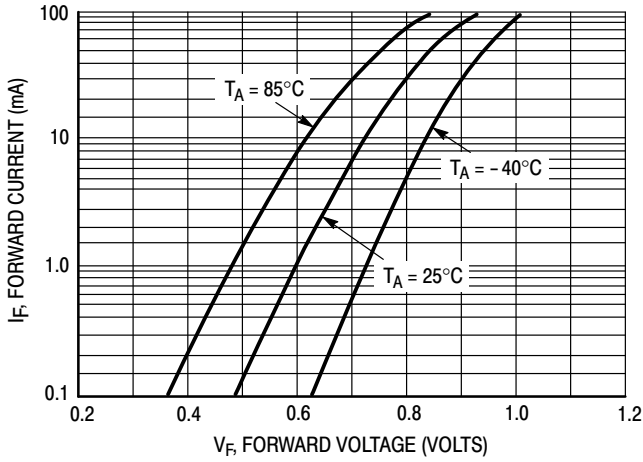
| Characteristic   | Symbol     | Min | Max                        | Unit            |
|--|------------|-----|----------------------------|-----------------|
| <b>OFF CHARACTERISTICS</b>   |            |     |                            |                 |
| Reverse Voltage Leakage Current<br>( $V_R = 75\text{ Vdc}$ )<br>( $V_R = 75\text{ Vdc}, T_J = 150^\circ\text{C}$ )<br>( $V_R = 25\text{ Vdc}, T_J = 150^\circ\text{C}$ ) | $I_R$      | –   | 1.0<br>50<br>30            | $\mu\text{Adc}$ |
| Reverse Breakdown Voltage<br>( $I_{BR} = 100\ \mu\text{Adc}$ )   | $V_{(BR)}$ | 75  | –                          | Vdc             |
| Forward Voltage<br>( $I_F = 1.0\ \text{mAdc}$ )<br>( $I_F = 10\ \text{mAdc}$ )<br>( $I_F = 50\ \text{mAdc}$ )<br>( $I_F = 150\ \text{mAdc}$ )                            | $V_F$      | –   | 715<br>855<br>1000<br>1250 | mV              |
| Diode Capacitance<br>( $V_R = 0, f = 1.0\ \text{MHz}$ )  | $C_D$      | –   | 2.0                        | pF              |
| Forward Recovery Voltage<br>( $I_F = 10\ \text{mAdc}, t_r = 20\ \text{ns}$ )   | $V_{FR}$   | –   | 1.75                       | Vdc             |
| Reverse Recovery Time<br>( $I_F = I_R = 10\ \text{mAdc}, R_L = 50\ \Omega$ )   | $t_{rr}$   | –   | 6.0                        | ns              |
| Stored Charge<br>( $I_F = 10\ \text{mAdc}$ to $V_R = 5.0\ \text{Vdc}$ ,<br>$R_L = 500\ \Omega$ )   | $Q_S$      | –   | 45                         | pC              |

# BAS16H, SBAS16H

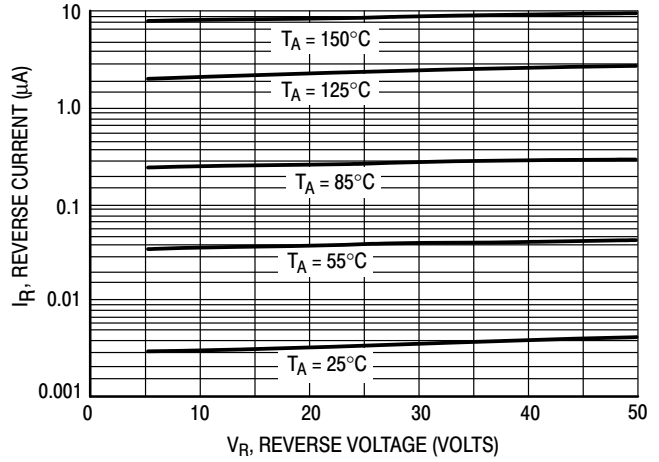


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p > t_{rr}$

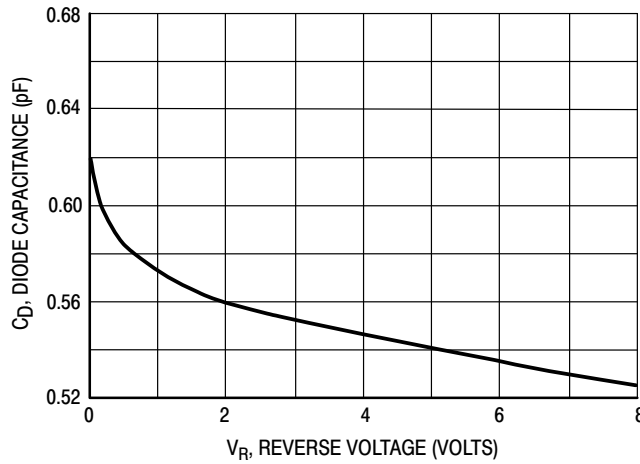
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

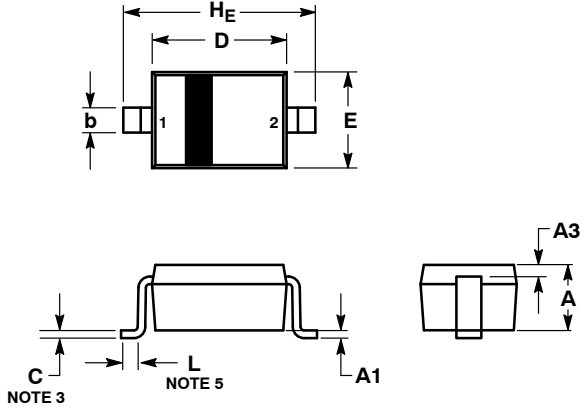


**Figure 4. Capacitance**

# BAS16H, SBAS16H

## PACKAGE DIMENSIONS

SOD-323  
CASE 477-02  
ISSUE H



NOTES:

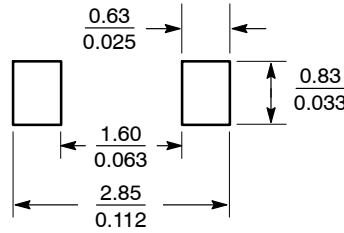
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

| DIM | MILLIMETERS |      |       | INCHES    |       |       |
|-----|-------------|------|-------|-----------|-------|-------|
|     | MIN         | NOM  | MAX   | MIN       | NOM   | MAX   |
| A   | 0.80        | 0.90 | 1.00  | 0.031     | 0.035 | 0.040 |
| A1  | 0.00        | 0.05 | 0.10  | 0.000     | 0.002 | 0.004 |
| A3  | 0.15 REF    |      |       | 0.006 REF |       |       |
| b   | 0.25        | 0.32 | 0.4   | 0.010     | 0.012 | 0.016 |
| C   | 0.089       | 0.12 | 0.177 | 0.003     | 0.005 | 0.007 |
| D   | 1.60        | 1.70 | 1.80  | 0.062     | 0.066 | 0.070 |
| E   | 1.15        | 1.25 | 1.35  | 0.045     | 0.049 | 0.053 |
| L   | 0.08        |      |       | 0.003     |       |       |
| HE  | 2.30        | 2.50 | 2.70  | 0.090     | 0.098 | 0.105 |

STYLE 1:

1. CATHODE (POLARITY BAND)
2. ANODE

### SOLDERING FOOTPRINT\*



\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331