

# Switching Diode

## BAS16P2T5G

The BAS16P2T5G Switching Diode is a spin-off of our popular SOT-23 three-leaded device. It is designed for switching applications and is housed in the SOD-923 surface mount package. This device is ideal for low-power surface mount applications, where board space is at a premium.

### Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS

| Rating                     | Symbol          | Value | Unit |
|----------------------------|-----------------|-------|------|
| Continuous Reverse Voltage | $V_R$           | 100   | Vdc  |
| Peak Forward Current       | $I_F$           | 200   | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500   | mAdc |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

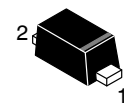
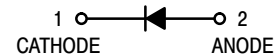
| Characteristic   | Symbol          | Max            | Unit                      |
|--|-----------------|----------------|---------------------------|
| Thermal Resistance,<br>Junction-to-Ambient (Note 1)<br>Total Power Dissipation @<br>$T_A = 25^\circ\text{C}$ | $R_{\theta JA}$ | 520            | $^\circ\text{C}/\text{W}$ |
|  | $P_D$           | 240            | mW                        |
| Thermal Resistance,<br>Junction-to-Ambient (Note 2)<br>Total Power Dissipation @<br>$T_A = 25^\circ\text{C}$ | $R_{\theta JA}$ | 175            | $^\circ\text{C}/\text{W}$ |
|  | $P_D$           | 710            | mW                        |
| Junction and Storage<br>Temperature Range  | $T_J, T_{stg}$  | -55 to<br>+150 | $^\circ\text{C}$          |

1. Mounted onto a 4 in square FR-4 board 10 mm sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.
2. Mounted onto a 4 in square FR-4 board 1 in sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.



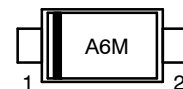
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SOD-923  
CASE 514AB

### MARKING DIAGRAM



A6 = Specific Device Code  
M = Month Code

### ORDERING INFORMATION

| Device     | Package              | Shipping†          |
|------------|----------------------|--------------------|
| BAS16P2T5G | SOD-923<br>(Pb-Free) | 8000 / 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.

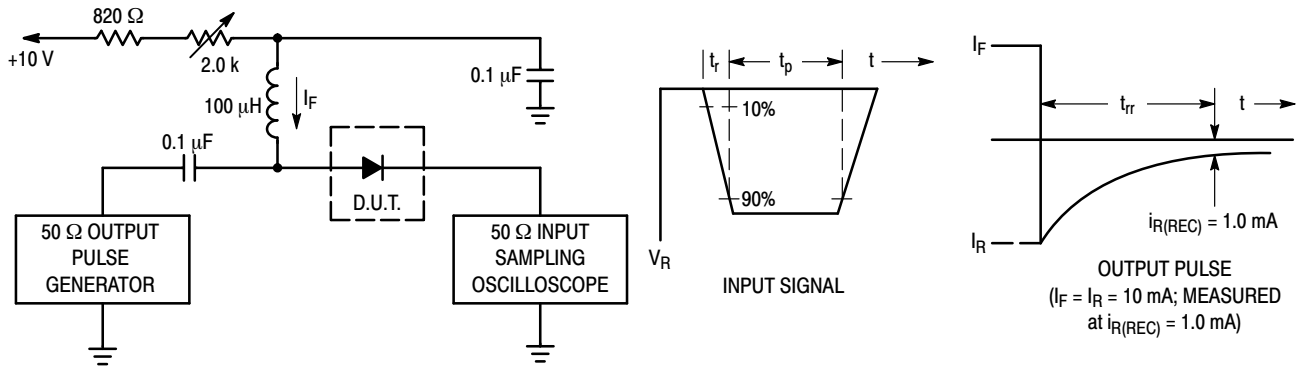
# BAS16P2T5G

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

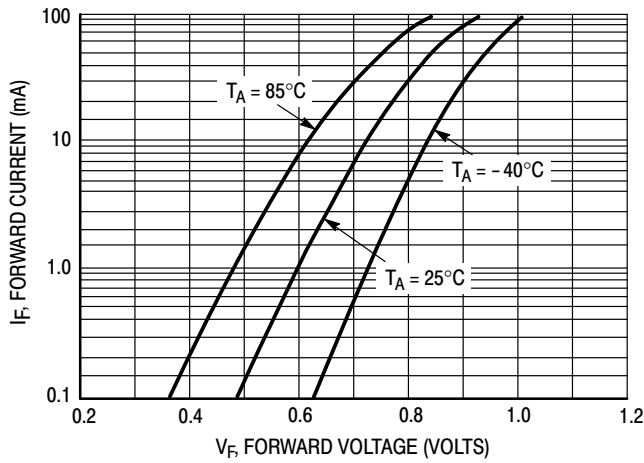
| Characteristic   | Symbol     | Min              | Max                        | Unit            |
|--|------------|------------------|----------------------------|-----------------|
| <b>OFF CHARACTERISTICS</b>   |            |                  |                            |                 |
| Reverse Voltage Leakage Current<br>( $V_R = 75\text{ Vdc}$ )<br>( $V_R = 100\text{ Vdc}$ )<br>( $V_R = 75\text{ Vdc}, T_J = 150^\circ\text{C}$ )<br>( $V_R = 25\text{ Vdc}, T_J = 150^\circ\text{C}$ ) | $I_R$      | –<br>–<br>–<br>– | 1.0<br>100<br>50<br>30     | $\mu\text{Adc}$ |
| Reverse Breakdown Voltage<br>( $I_{BR} = 100\ \mu\text{Adc}$ )   | $V_{(BR)}$ | 100              | –                          | Vdc             |
| Forward Voltage<br>( $I_F = 1.0\ \text{mAdc}$ )<br>( $I_F = 10\ \text{mAdc}$ )<br>( $I_F = 50\ \text{mAdc}$ )<br>( $I_F = 150\ \text{mAdc}$ )  | $V_F$      | –<br>–<br>–<br>– | 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              |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

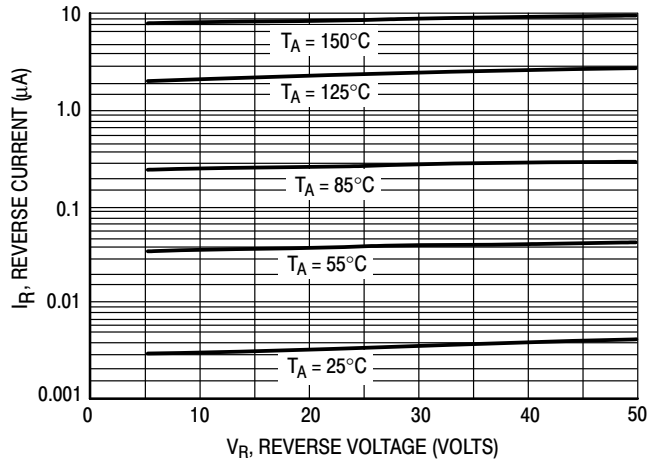
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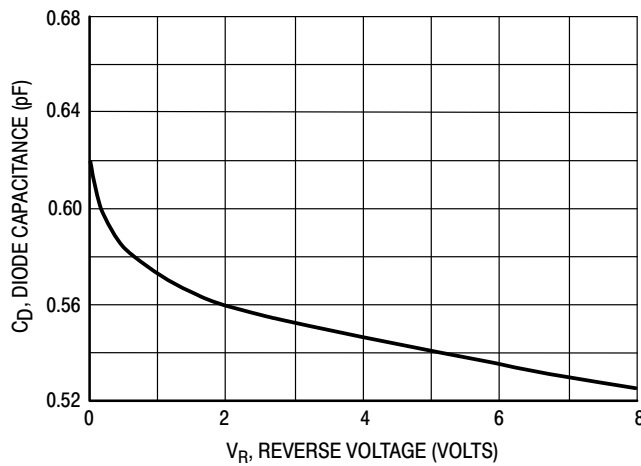
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

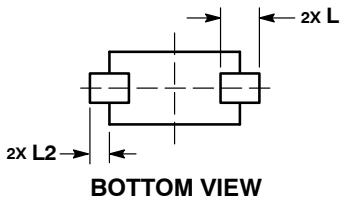
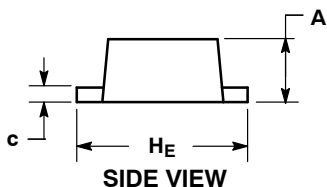
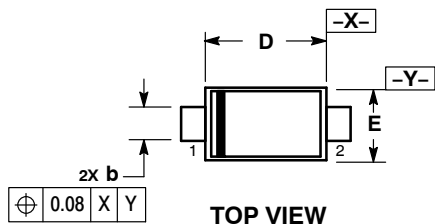


**Figure 4. Capacitance**

# BAS16P2T5G

## PACKAGE DIMENSIONS

**SOD-923**  
CASE 514AB  
ISSUE D

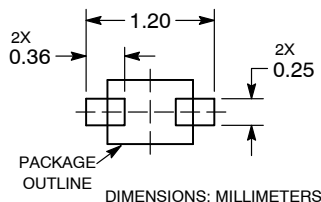


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.
5. DIMENSION L WILL NOT EXCEED 0.30mm.

| DIM | MILLIMETERS |      |      | INCHES    |       |       |
|-----|-------------|------|------|-----------|-------|-------|
|     | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A   | 0.34        | 0.37 | 0.40 | 0.013     | 0.015 | 0.016 |
| b   | 0.15        | 0.20 | 0.25 | 0.006     | 0.008 | 0.010 |
| c   | 0.07        | 0.12 | 0.17 | 0.003     | 0.005 | 0.007 |
| D   | 0.75        | 0.80 | 0.85 | 0.030     | 0.031 | 0.033 |
| E   | 0.55        | 0.60 | 0.65 | 0.022     | 0.024 | 0.026 |
| HE  | 0.95        | 1.00 | 1.05 | 0.037     | 0.039 | 0.041 |
| L   | 0.19 REF    |      |      | 0.007 REF |       |       |
| L2  | 0.05        | 0.10 | 0.15 | 0.002     | 0.004 | 0.006 |

**SOLDERING FOOTPRINT\***



See Application Note AND8455/D for more mounting details

\*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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