

# 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

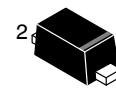
| Rating                     | Symbol          | Value | Unit |
|----------------------------|-----------------|-------|------|
| Continuous Reverse Voltage | $V_R$           | 100   | Vdc  |
| Peak Forward Current       | $I_F$           | 200   | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$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

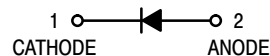
### THERMAL CHARACTERISTICS

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

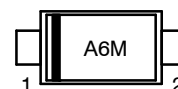
1. Mounted onto a 4 in square FR-4 board 10 mm sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.
2. Mounted onto a 4 in square FR-4 board 1 in sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.



SOD-923  
CASE 514AB



### MARKING DIAGRAM



A6 = Specific Device Code  
M = Month Code

### ORDERING INFORMATION

| Device     | Package              | Shipping <sup>†</sup> |
|------------|----------------------|-----------------------|
| BAS16P2T5G | SOD-923<br>(Pb-Free) | 8000 / Tape & Reel    |

<sup>†</sup>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](#).

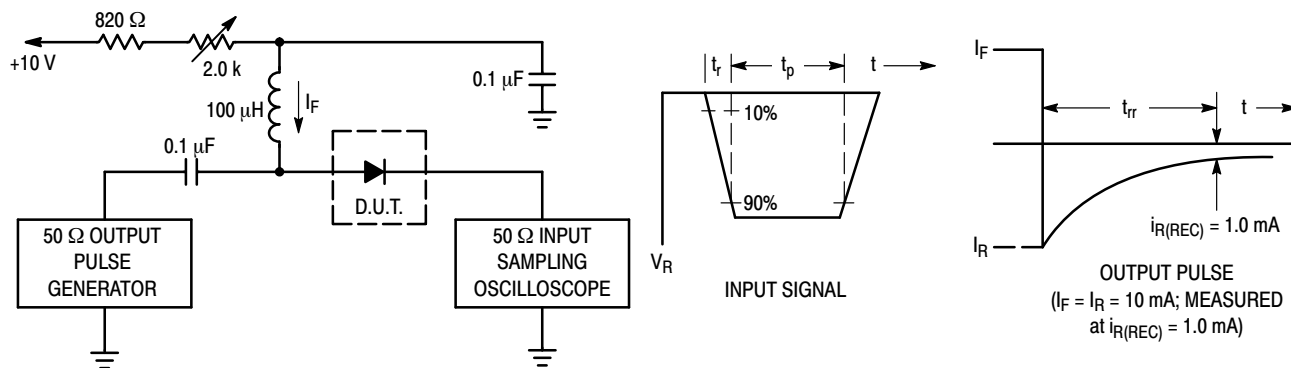
# BAS16P2T5G

## 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              |

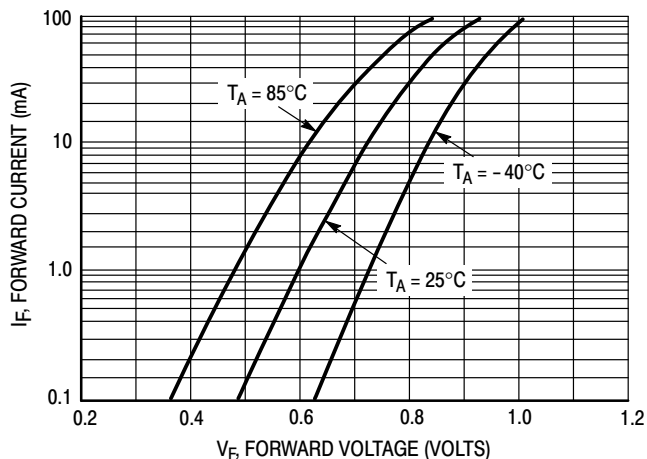
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

# BAS16P2T5G

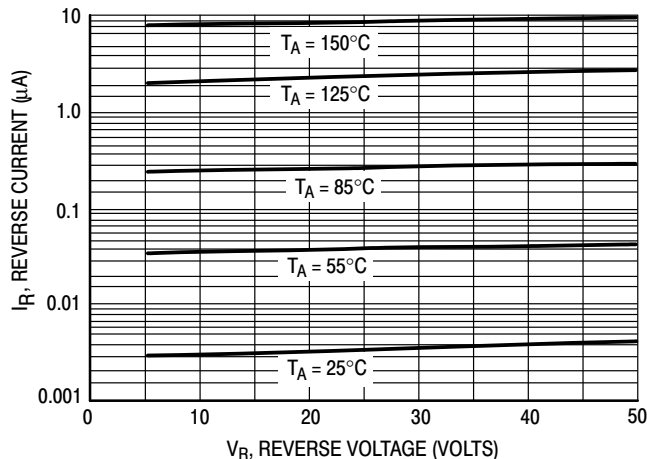


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p > t_{rr}$

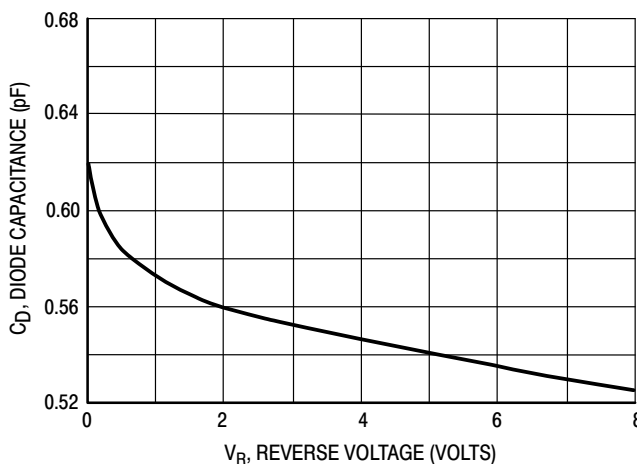
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



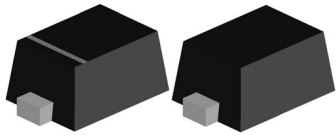
**Figure 3. Leakage Current**



**Figure 4. Capacitance**

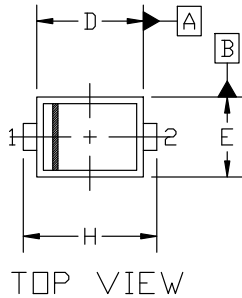
# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS



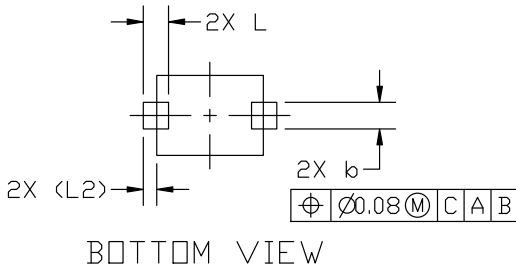
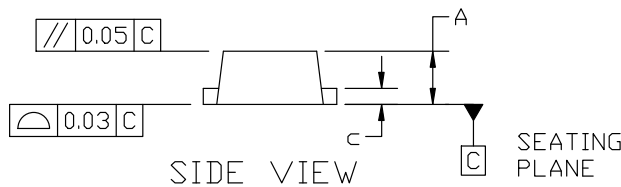
**SOD-923 0.80x0.60x0.37**  
**CASE 514AB**  
**ISSUE E**

DATE 08 FEB 2024

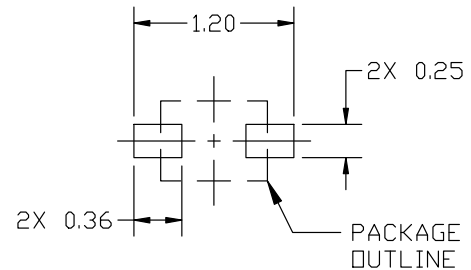


**NOTES:**

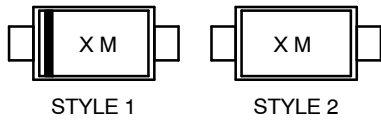
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.
5. DIMENSION L WILL NOT EXCEED 0.30mm.



| MILLIMETERS |          |      |      |
|-------------|----------|------|------|
| DIM         | MIN.     | NOM. | MAX. |
| A           | 0.34     | 0.37 | 0.40 |
| b           | 0.15     | 0.20 | 0.25 |
| c           | 0.07     | 0.12 | 0.17 |
| D           | 0.75     | 0.80 | 0.85 |
| E           | 0.55     | 0.60 | 0.65 |
| H           | 0.95     | 1.00 | 1.05 |
| L           | 0.19 REF |      |      |
| L2          | 0.05     | 0.10 | 0.15 |



**GENERIC MARKING DIAGRAM\***



X = Specific Device Code  
M = Date Code

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

STYLE 1: PIN 1. CATHODE (POLARITY BAND)  
2. ANODE

STYLE 2: NO POLARITY

**RECOMMENDED MOUNTING 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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| <b>DESCRIPTION:</b>     | <b>SOD-923 0.80x0.60x0.37</b> | <b>PAGE 1 OF 1</b>   |

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