

BAS16P2T5G

Switching Diode

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 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

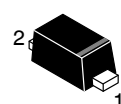
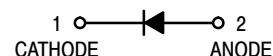
| Characteristic | Symbol | Max | Unit |
|--|-----------------|----------------|--------------------|
| Thermal Resistance, Junction-to-Ambient (Note 1) Total Power Dissipation @ $T_A = 25^\circ\text{C}$ | $R_{\theta JA}$ | 520 | $^\circ\text{C/W}$ |
| | P_D | 240 | mW |
| Thermal Resistance, Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$ | $R_{\theta JA}$ | 175 | $^\circ\text{C/W}$ |
| | P_D | 710 | mW |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +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 514AA
PLASTIC

MARKING DIAGRAM



A6 = Specific Device Code
M = Month Code

ORDERING INFORMATION

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

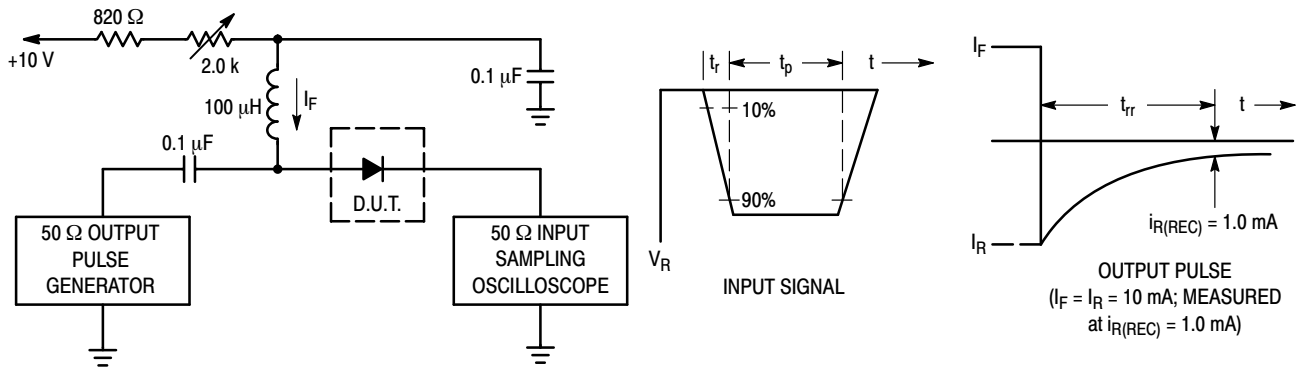
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

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

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- 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

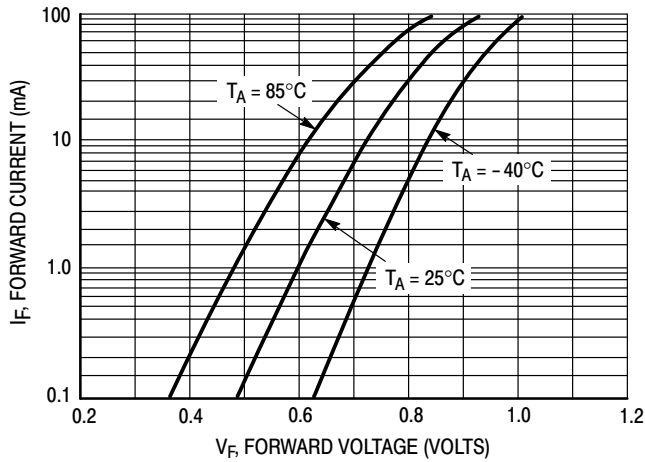


Figure 2. Forward Voltage

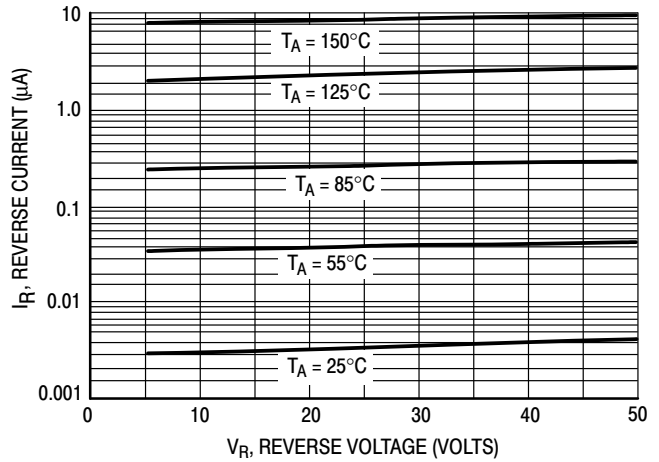


Figure 3. Leakage Current

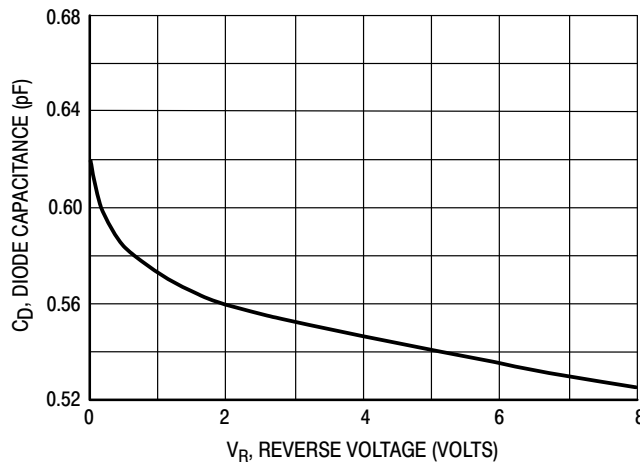
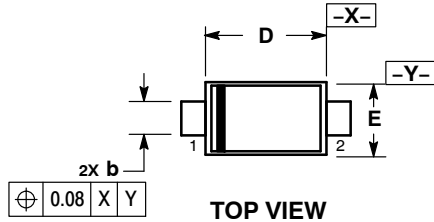


Figure 4. Capacitance

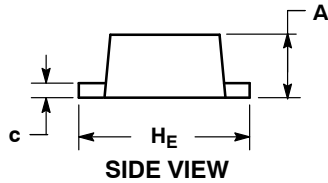
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PACKAGE DIMENSIONS

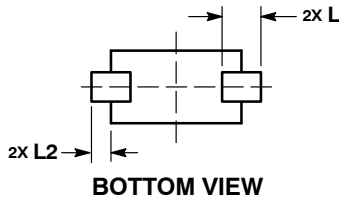
SOD-923
CASE 514AA
ISSUE E



TOP VIEW



SIDE VIEW



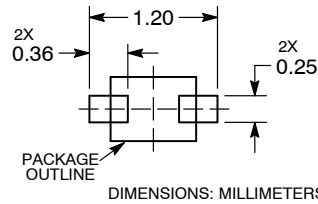
BOTTOM VIEW

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.

| DIM | MILLIMETERS | | | INCHES | | |
|----------------|-------------|------|------|-----------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.34 | 0.39 | 0.43 | 0.013 | 0.015 | 0.017 |
| 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 |
| H _E | 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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