

# 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

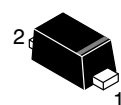
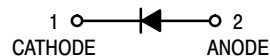
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient (Note 1) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$	520	$^\circ\text{C/W}$
	$P_D$	240	mW
Thermal Resistance, Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$	175	$^\circ\text{C/W}$
	$P_D$	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

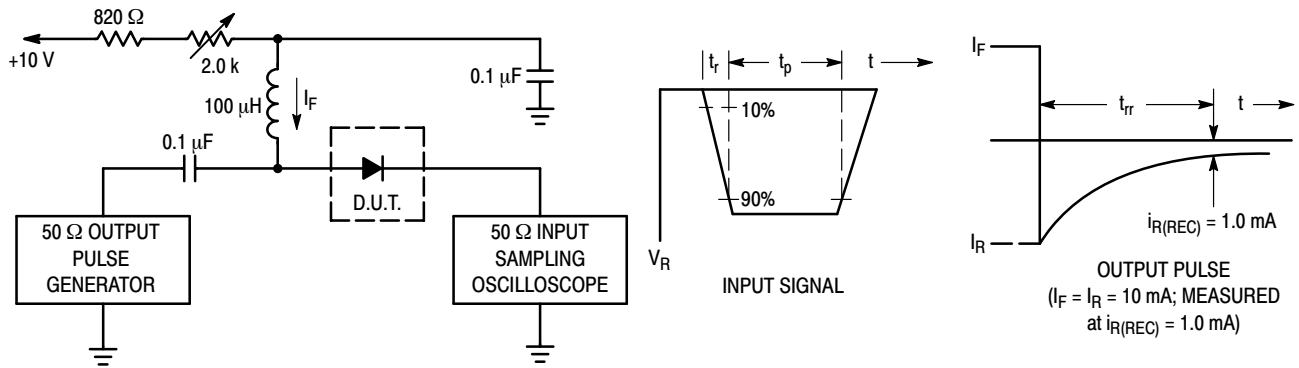
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# BAS16P2T5G

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

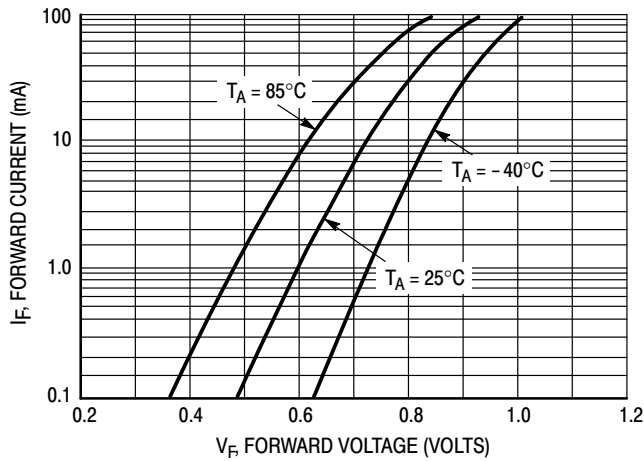
Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Voltage Leakage Current (V <sub>R</sub> = 75 Vdc) (V <sub>R</sub> = 100 Vdc) (V <sub>R</sub> = 75 Vdc, T <sub>J</sub> = 150°C) (V <sub>R</sub> = 25 Vdc, T <sub>J</sub> = 150°C)	I <sub>R</sub>	- - - -	1.0 100 50 30	μA <sub>dc</sub>
Reverse Breakdown Voltage (I <sub>BR</sub> = 100 μA <sub>dc</sub> )	V <sub>(BR)</sub>	100	-	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 1.0 mA <sub>dc</sub> ) (I <sub>F</sub> = 10 mA <sub>dc</sub> ) (I <sub>F</sub> = 50 mA <sub>dc</sub> ) (I <sub>F</sub> = 150 mA <sub>dc</sub> )	V <sub>F</sub>	- - - -	715 855 1000 1250	mV
Diode Capacitance (V <sub>R</sub> = 0, f = 1.0 MHz)	C <sub>D</sub>	-	2.0	pF
Forward Recovery Voltage (I <sub>F</sub> = 10 mA <sub>dc</sub> , t <sub>r</sub> = 20 ns)	V <sub>FR</sub>	-	1.75	V <sub>dc</sub>
Reverse Recovery Time (I <sub>F</sub> = I <sub>R</sub> = 10 mA <sub>dc</sub> , R <sub>L</sub> = 50 Ω)	t <sub>rr</sub>	-	6.0	ns
Stored Charge (I <sub>F</sub> = 10 mA <sub>dc</sub> to V <sub>R</sub> = 5.0 Vdc, R <sub>L</sub> = 500 Ω)	Q <sub>S</sub>	-	45	pC

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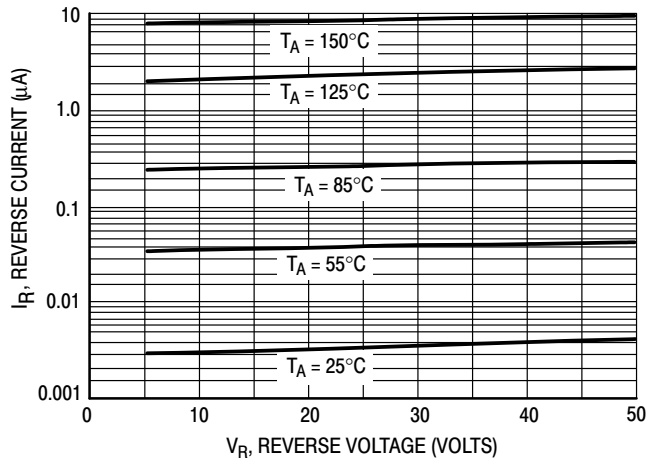


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p > t_{rr}$

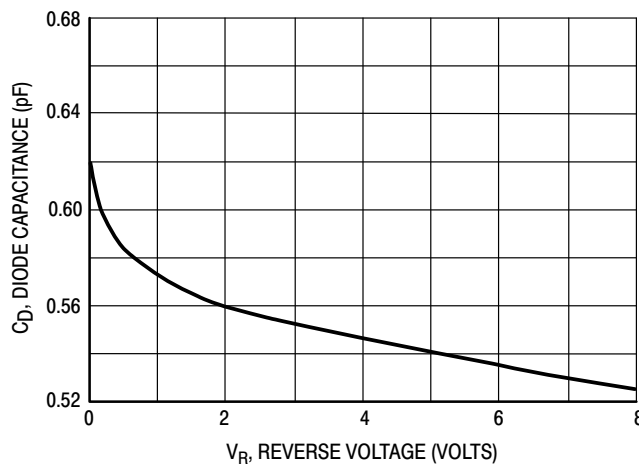
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

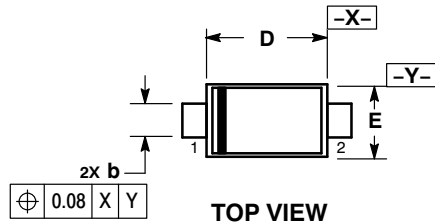


**Figure 4. Capacitance**

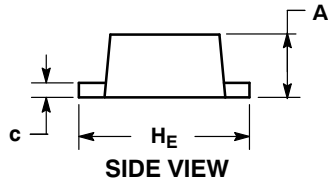
# BAS16P2T5G

## PACKAGE DIMENSIONS

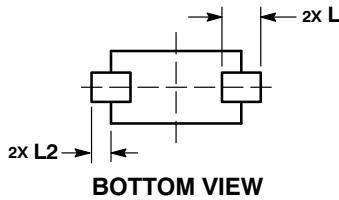
SOD-923  
CASE 514AA  
ISSUE E



TOP VIEW



SIDE VIEW



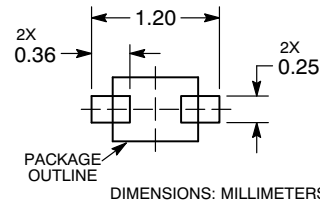
BOTTOM VIEW

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 <sub>E</sub>	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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