

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

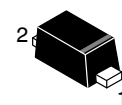
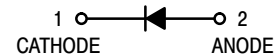
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient (Note 1) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ P_D	520 240	$^\circ\text{C/W}$ mW
Thermal Resistance, Junction-to-Ambient (Note 2) Total Power Dissipation @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$ P_D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

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



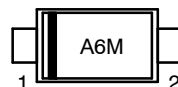
ON Semiconductor®

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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 (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.

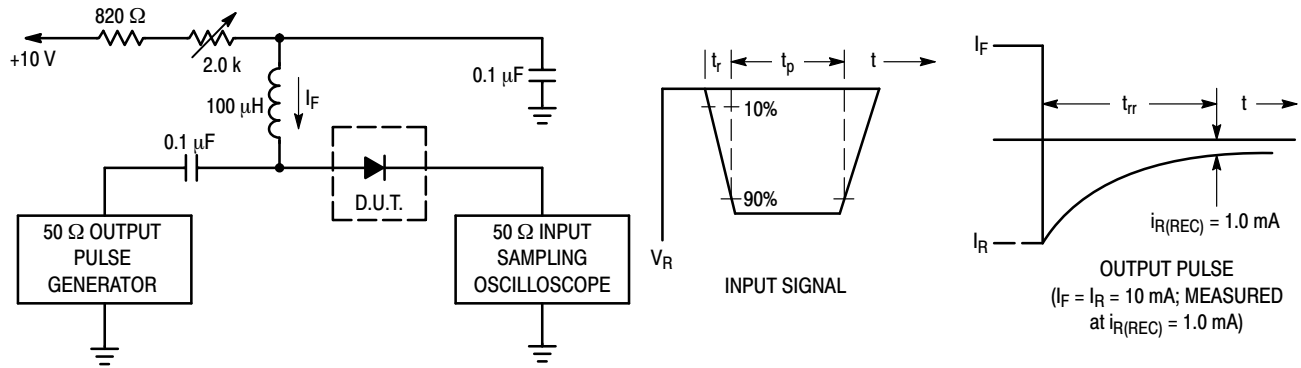
BAS16P2T5G

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

Characteristic	Symbol	Min	Max	Unit
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	μA
Reverse Breakdown Voltage ($I_{BR} = 100\text{ }\mu\text{A}$)	$V_{(BR)}$	100	–	Vdc
Forward Voltage ($I_F = 1.0\text{ mA}$) ($I_F = 10\text{ mA}$) ($I_F = 50\text{ mA}$) ($I_F = 150\text{ mA}$)	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 ($I_F = 10\text{ mA}$, $t_r = 20\text{ ns}$)	V_{FR}	–	1.75	Vdc
Reverse Recovery Time ($I_F = I_R = 10\text{ mA}$, $R_L = 50\text{ }\Omega$)	t_{rr}	–	6.0	ns
Stored Charge ($I_F = 10\text{ mA}$ to $V_R = 5.0\text{ Vdc}$, $R_L = 500\text{ }\Omega$)	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. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

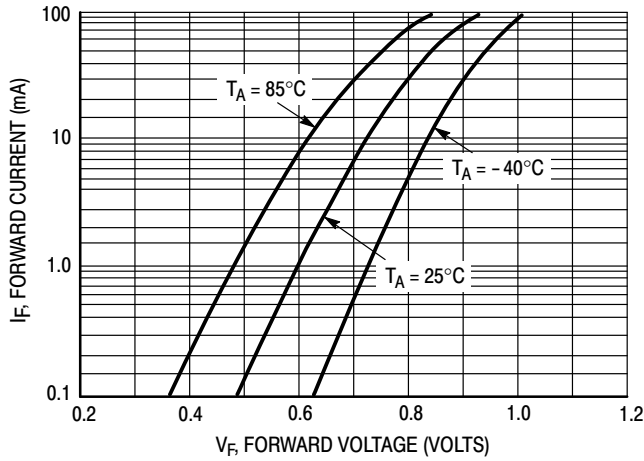


Figure 2. Forward Voltage

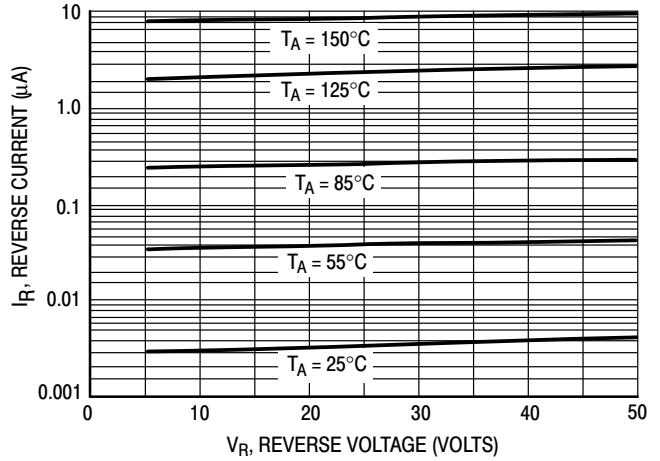


Figure 3. Leakage Current

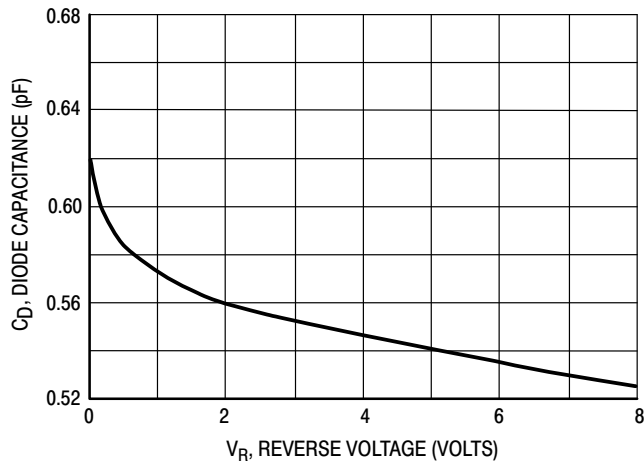
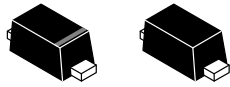


Figure 4. Capacitance

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

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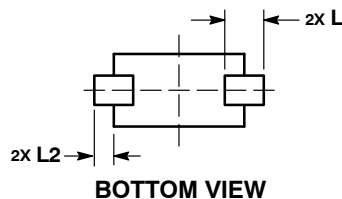
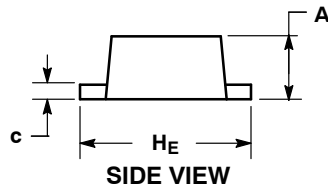
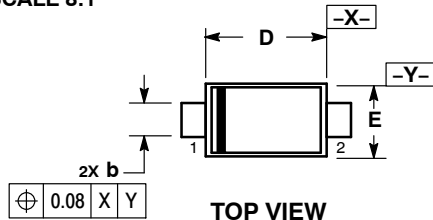


STYLE 1 STYLE 2

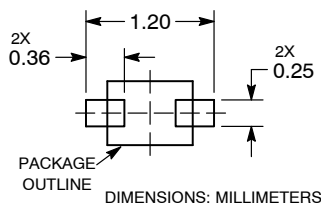
SCALE 8:1

SOD-923
CASE 514AB
ISSUE D

DATE 03 SEP 2020



SOLDERING FOOTPRINT*



See Application Note AND8455/D for more mounting details

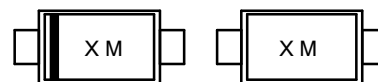
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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
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

GENERIC MARKING DIAGRAM*



STYLE 1

STYLE 2

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.

STYLE 1:

1. CATHODE (POLARITY BAND)
2. ANODE

STYLE 2:

NO POLARITY

DOCUMENT NUMBER: 98AON23284D

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DESCRIPTION: SOD-923, 1.0X0.6X0.37, MAX HEIGHT 0.40

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