

# BAS21HT1

Preferred Device

## High Voltage Switching Diode

### Features

- Pb-Free Packages are Available

### MAXIMUM RATINGS

Symbol	Rating	Value	Unit
$V_R$	Continuous Reverse Voltage	250	Vdc
$V_{RRM}$	Repetitive Peak Reverse Voltage	250	Vdc
$I_F$	Peak Forward Current	200	mAdc
$I_{FM(surge)}$	Peak Forward Surge Current	625	mAdc

### THERMAL CHARACTERISTICS

Symbol	Characteristic	Max	Unit
$P_D$	Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	200 1.57	mW mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	635	$^\circ\text{C}/\text{W}$
$T_J, T_{stg}$	Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

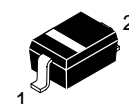
1. FR-5 Minimum Pad



ON Semiconductor®

<http://onsemi.com>

## HIGH VOLTAGE SWITCHING DIODE



SOD-323  
CASE 477  
STYLE 1



JS = Device Code  
M = Date Code\*  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

Device	Package	Shipping†
BAS21HT1	SOD-323	3000/Tape & Reel
BAS21HT1G	SOD-323 (Pb-Free)	3000/Tape & Reel
BAS21HT3	SOD-323	10,000/Tape & Reel
BAS21HT3G	SOD-323 (Pb-Free)	10,000/Tape & Reel

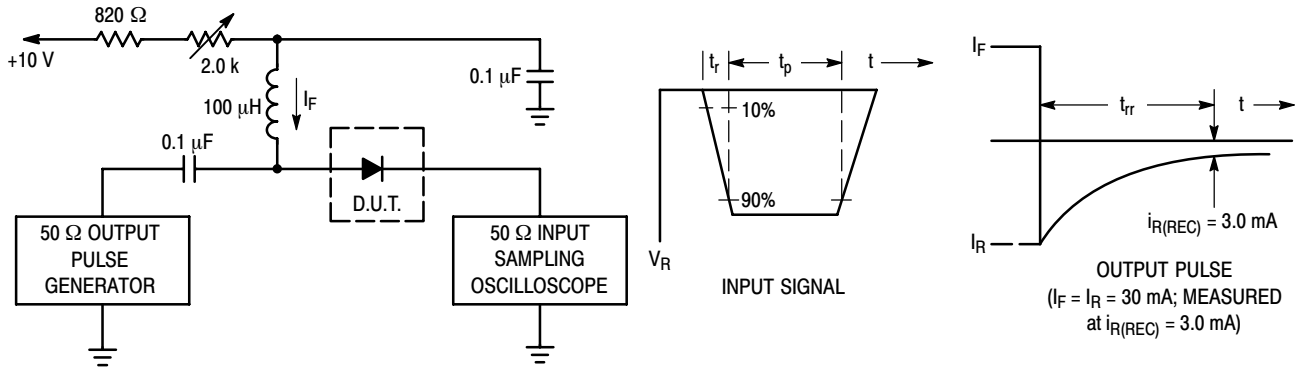
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

# BAS21HT1

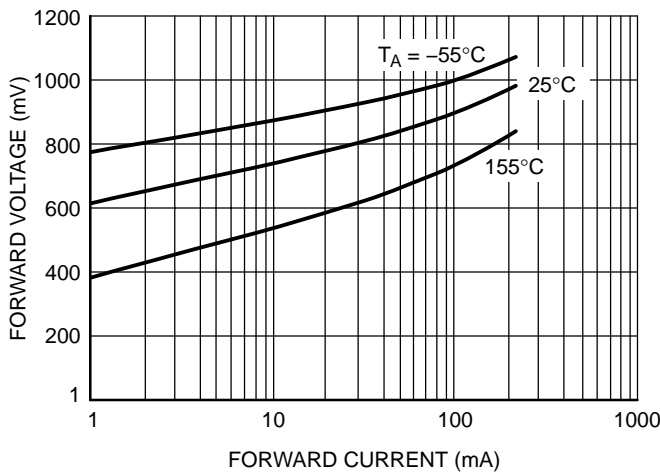
## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Voltage Leakage Current ( $V_R = 200\text{ Vdc}$ ) ( $V_R = 200\text{ Vdc}$ , $T_J = 150^\circ\text{C}$ )	$I_R$	–	0.1 100	$\mu\text{A}$ $\text{dc}$
Reverse Breakdown Voltage ( $I_{BR} = 100\ \mu\text{A}$ )	$V_{(BR)}$	250	–	Vdc
Forward Voltage ( $I_F = 100\ \text{mA}$ ) ( $I_F = 200\ \text{mA}$ )	$V_F$	– –	1000 1250	mV
Diode Capacitance ( $V_R = 0$ , $f = 1.0\ \text{MHz}$ )	$C_D$	–	5.0	pF
Reverse Recovery Time ( $I_F = I_R = 30\ \text{mA}$ , $R_L = 100\ \Omega$ )	$t_{rr}$	–	50	ns

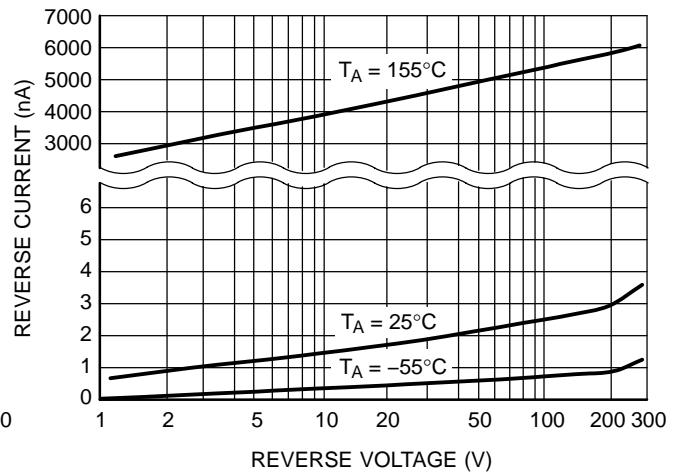


- Notes: 1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current ( $I_F$ ) of 30 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 30 mA.  
 3.  $t_p \gg t_{rr}$

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



**Figure 2. Forward Voltage**

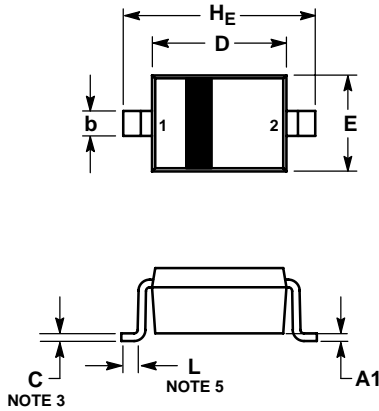


**Figure 3. Reverse Leakage**

# BAS21HT1

## PACKAGE DIMENSIONS

SOD-323  
PLASTIC PACKAGE  
CASE 477-02  
ISSUE G



NOTES:

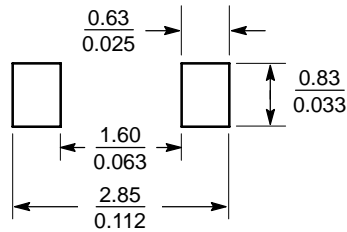
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
HE	2.30	2.50	2.70	0.090	0.098	0.105

STYLE 1:

1. CATHODE
2. ANODE

### SOLDERING 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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