

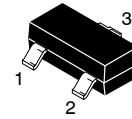


**THE DATASHEET OF  
NSVBAS116LT3G**



# Switching Diode

## BAS116L



SOT-23 (TO-236)  
CASE 318  
STYLE 8

### Features

- Low Leakage Current Applications
- Medium Speed Switching Times
- Available in 8 mm Tape and Reel
  - Use BAS116LT1G to order the 7 inch/3,000 unit reel
- S and NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS

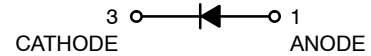
Rating	Symbol	Value	Unit
Continuous Reverse Voltage	$V_R$	75	Vdc
Peak Forward Current	$I_F$	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc

### THERMAL CHARACTERISTICS

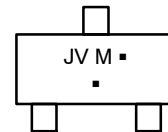
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate (Note 2) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

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.

1. FR-5 =  $1.0 \times 0.75 \times 0.062$  in.
2. Alumina =  $0.4 \times 0.3 \times 0.024$  in. 99.5% alumina.



### MARKING DIAGRAM



JV = Specific Device Code  
M = Date Code\*  
■ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation and/or overbar may vary depending upon manufacturing location.

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
BAS116LT1G SBAS116LT1G	SOT-23 (Pb-Free)	3000 / Tape & Reel
BAS116LT3G NSVBAS116LT3G	SOT-23 (Pb-Free)	10000 / Tape & Reel

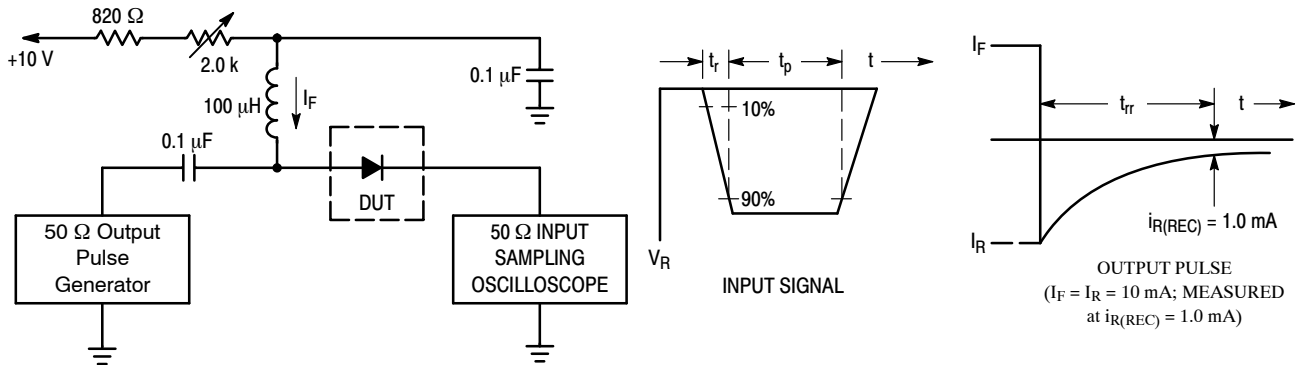
<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Breakdown Voltage ( $I_{BR} = 100 \mu\text{Adc}$ )	$V_{(BR)}$	75	-	Vdc
Reverse Voltage Leakage Current ( $V_R = 75 \text{Vdc}$ ) ( $V_R = 75 \text{Vdc}$ , $T_J = 150^\circ\text{C}$ )	$I_R$	-	5.0 80	nAdc
Forward Voltage ( $I_F = 1.0 \text{mA}$ ) ( $I_F = 10 \text{mA}$ ) ( $I_F = 50 \text{mA}$ ) ( $I_F = 150 \text{mA}$ )	$V_F$	-	900 1000 1100 1250	mV
Diode Capacitance ( $V_R = 0 \text{V}$ , $f = 1.0 \text{MHz}$ )	$C_D$	-	2.0	pF
Reverse Recovery Time ( $I_F = I_R = 10 \text{mA}$ ) (Figure 1)	$t_{rr}$	-	3.0	$\mu\text{s}$

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.



1. A 2.0 k $\Omega$  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**

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## TYPICAL CHARACTERISTICS

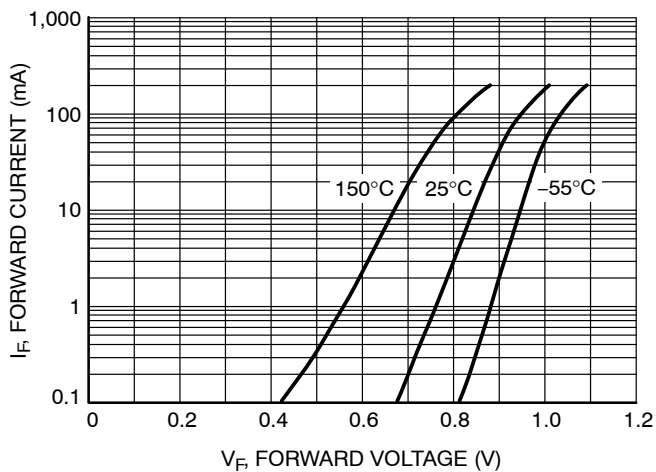


Figure 2. Forward Voltage

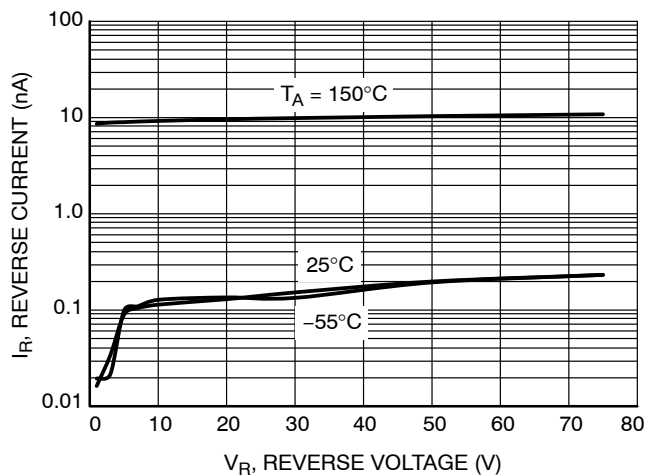


Figure 3. Leakage Current

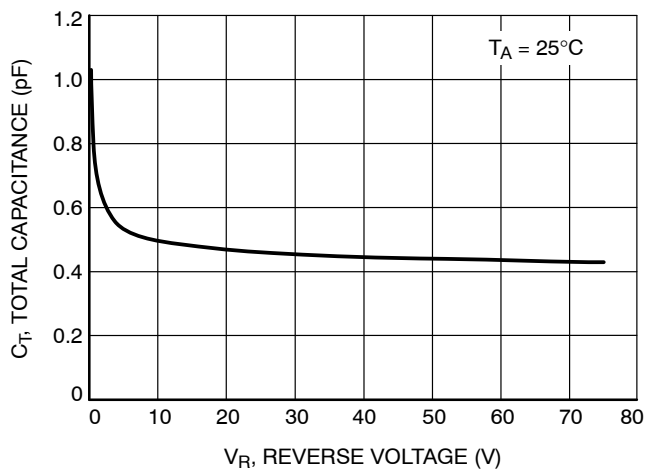


Figure 4. Capacitance

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