

# Switching Diode

## BAS116TT1G

### Features

- Low Leakage Current Applications
- Medium Speed Switching Times
- Available in 8 mm Tape and Reel
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

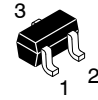
Rating	Symbol	Max	Unit
Continuous Reverse Voltage	V <sub>R</sub>	75	V
Peak Forward Current	I <sub>F</sub>	200	mA
Peak Forward Surge Current	I <sub>FM(surge)</sub>	500	mA

### THERMAL CHARACTERISTICS

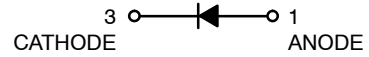
Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR-4 Board (Note 1) T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	225	mW
Thermal Resistance, Junction-to-Ambient (Note 1)	R <sub>θJA</sub>	555	°C/W
Total Device Dissipation, FR-4 Board (Note 2) T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	360	mW
Thermal Resistance, Junction-to-Ambient (Note 2)	R <sub>θJA</sub>	345	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

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.

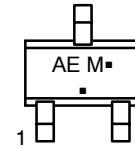
1. FR-4 @ Minimum Pad
2. FR-4 @ 1.0 × 1.0 Inch Pad



CASE 463  
SOT-416  
STYLE 2



### MARKING DIAGRAM



- AE = Specific Device Code
- M = Date Code
- = Pb-Free Package

### ORDERING INFORMATION

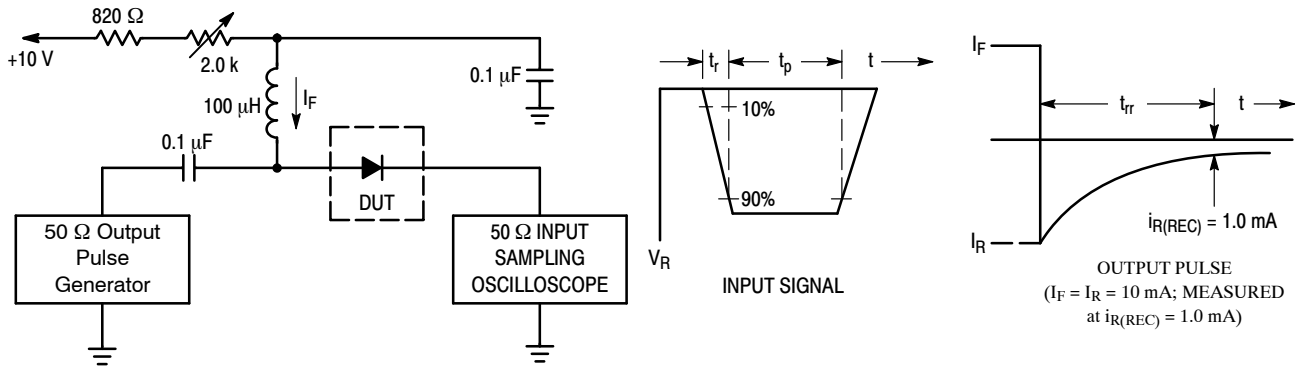
Device	Package	Shipping <sup>†</sup>
BAS116TT1G	SOT-416 (Pb-Free)	3000 / Tape & Reel

<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.

# BAS116TT1G

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

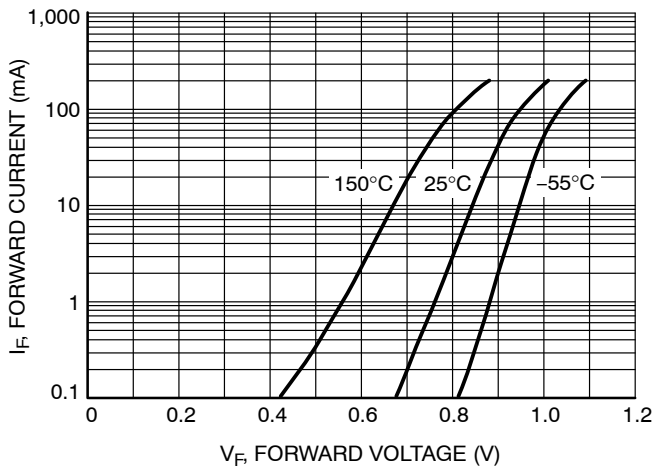
Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Breakdown Voltage ( $I_{BR} = 100 \mu\text{A}$ )	$V_{(BR)}$	75	-	Vdc
Reverse Voltage Leakage Current ( $V_R = 75 \text{ Vdc}$ ) ( $V_R = 75 \text{ Vdc}$ , $T_J = 150^\circ\text{C}$ )	$I_R$	-	5.0 80	nAdc
Forward Voltage ( $I_F = 1.0 \text{ mA}$ ) ( $I_F = 10 \text{ mA}$ ) ( $I_F = 50 \text{ mA}$ ) ( $I_F = 150 \text{ mA}$ )	$V_F$	-	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	$\mu\text{s}$



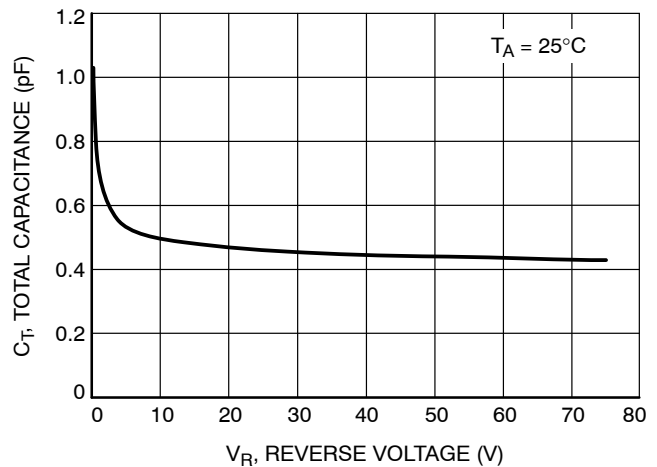
1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.
2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.
3.  $t_p \gg t_{rr}$

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

## TYPICAL CHARACTERISTICS



**Figure 2. Forward Voltage**



**Figure 3. Capacitance**

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

ON Semiconductor®



**SC-75/SOT-416**  
CASE 463-01  
ISSUE G

DATE 07 AUG 2015

SCALE 4:1



STYLE 1:  
PIN 1. BASE  
2. EMITTER  
3. COLLECTOR

STYLE 2:  
PIN 1. ANODE  
2. N/C  
3. CATHODE

STYLE 3:  
PIN 1. ANODE  
2. ANODE  
3. CATHODE

STYLE 4:  
PIN 1. CATHODE  
2. CATHODE  
3. ANODE

STYLE 5:  
PIN 1. GATE  
2. SOURCE  
3. DRAIN

**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.70	0.80	0.90	0.027	0.031	0.035
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.15	0.20	0.30	0.006	0.008	0.012
C	0.10	0.15	0.25	0.004	0.006	0.010
D	1.55	1.60	1.65	0.061	0.063	0.065
E	0.70	0.80	0.90	0.027	0.031	0.035
e	1.00 BSC			0.04 BSC		
L	0.10	0.15	0.20	0.004	0.006	0.008
HE	1.50	1.60	1.70	0.060	0.063	0.067

**GENERIC MARKING DIAGRAM\***



- XX = Specific Device Code
- M = Date Code
- = Pb-Free Package

\*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.

**SOLDERING FOOTPRINT\***



SCALE 10:1 (mm/inches)

\*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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