BAS16H

Switching Diode

Features

- S 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	100	V
Peak Forward Current	I_F	200	mA
Non−Repetitive Peak Forward Surge Current, 60 Hz	$I_{FSM(surge)}$	1.8	A
Repetitive Peak Forward Current (Note 2)	I_{FRM}	1.0	A
Non−Repetitive Peak Forward Current (Square Wave, T_J = 25°C prior to surge) t = 1 μs t = 10 μs t = 100 μs t = 1 ms t = 10 ms t = 100 ms t = 1 s	I_{FSM}	 36.0 18.0 6.0 3.0 1.8 1.3 1.0	A

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.
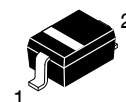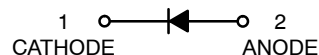
THERMAL CHARACTERISTICS

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

1. FR-4 Minimum Pad.
2. Square Wave, f = 40 kHz, PW = 200 ns
   Test Duration = 60 s, T_J = 25°C prior to surge.

ON Semiconductor®

1 ○——▷|——○ 2
CATHODE   ANODE

SOD−323
CASE 477
STYLE 1

MARKING DIAGRAM

A6 M

A6 = Specific Device Code
M = Date Code

ORDERING INFORMATION

| Device	Package	Shipping†
BAS16HT1G	SOD−323 (Pb−Free)	3000 / Tape & Reel
SBAS16HT1G	SOD−323 (Pb−Free)	3000 /T ape & Reel
BAS16HT3G	SOD−323 (Pb−Free)	10000 / Tape & Reel
SBAS16HT3G	SOD−323 (Pb−Free)	10000 / 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.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Voltage Leakage Current (V_R = 100 Vdc) (V_R = 75 Vdc, T_J = 150°C) (V_R = 25 Vdc, T_J = 150°C)	I_R	– – –	1.0 50 30	µAdc
Reverse Breakdown Voltage (I_{BR} = 100 µAdc)	$V_{(BR)}$	100	–	Vdc
Forward Voltage (I_F = 1.0 mAdc) (I_F = 10 mAdc) (I_F = 50 mAdc) (I_F = 150 mAdc)	V_F	– – – –	715 855 1000 1250	mV
Diode Capacitance (V_R = 0, f = 1.0 MHz)	C_D	–	2.0	pF
Forward Recovery Voltage (I_F = 10 mAdc, t_r = 20 ns)	V_{FR}	–	1.75	Vdc
Reverse Recovery Time (I_F = I_R = 10 mAdc, R_L = 50 Ω)	t_{rr}	–	6.0	ns
Stored Charge (I_F = 10 mAdc to V_R = 5.0 Vdc, R_L = 500 Ω)	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.
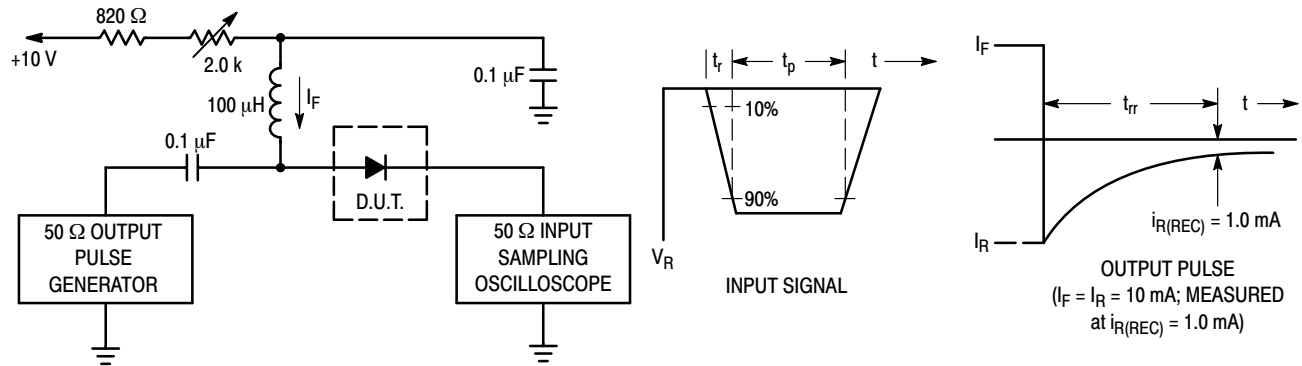
Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
      2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
      3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit
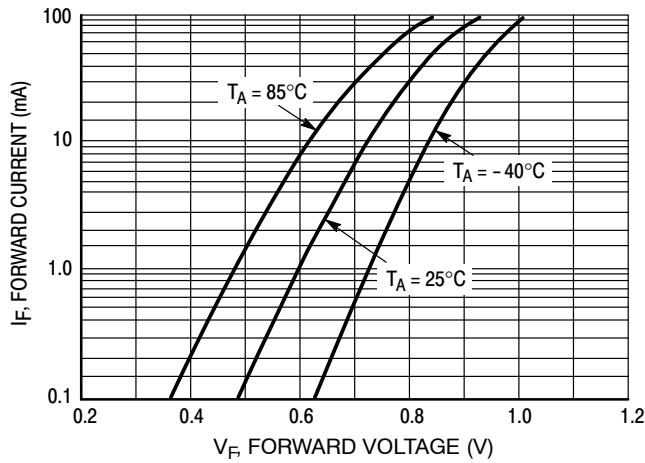
BAS16H

TYPICAL CHARACTERISTICS
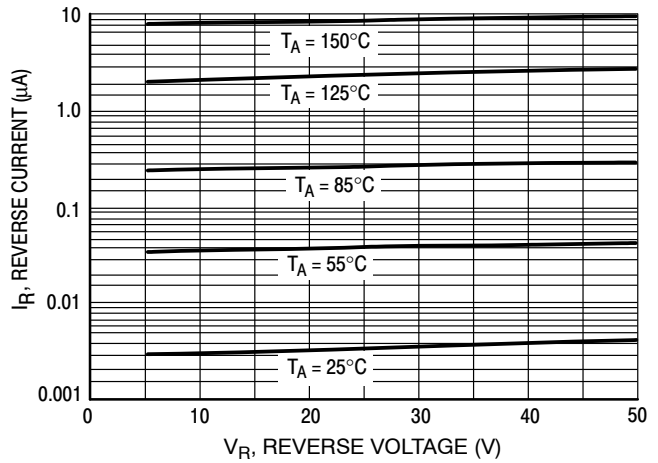
Figure 2. Forward Voltage
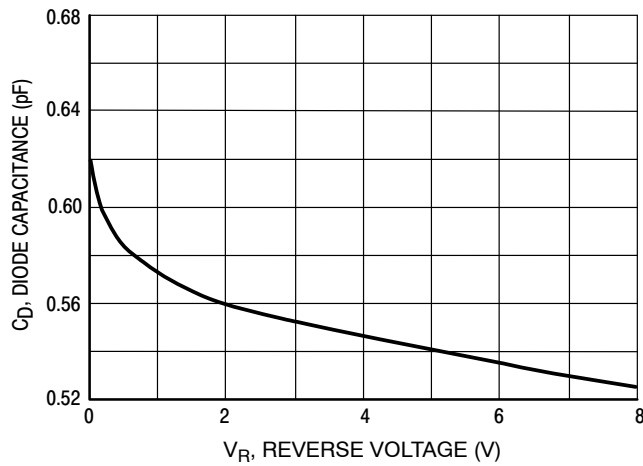
Figure 3. Leakage Current
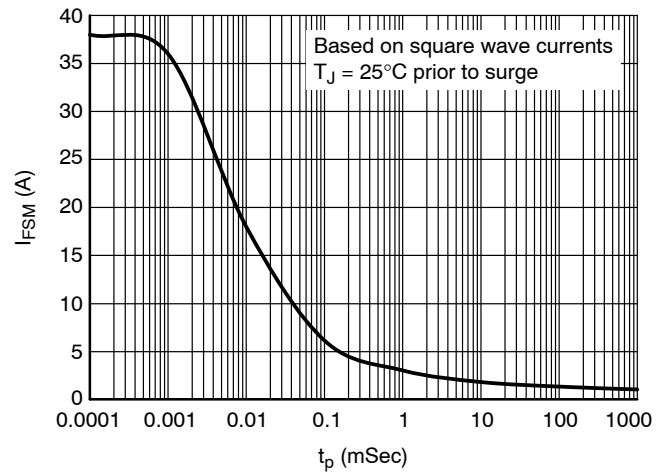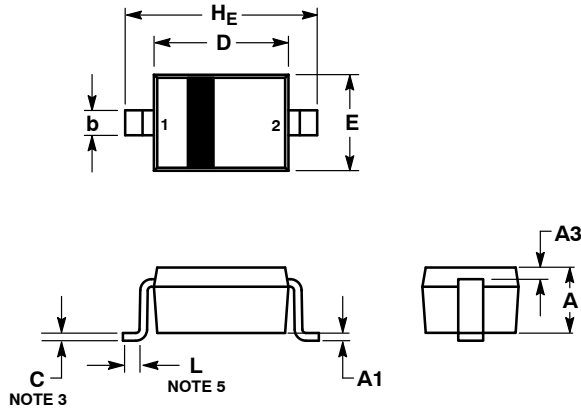
Figure 4. Capacitance

Figure 5. Maximum Non−repetitive Peak Forward Current as a Function of Pulse Duration, Typical Values

PACKAGE DIMENSIONS

SOD−323
CASE 477−02
ISSUE H

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:
PIN 1. CATHODE (POLARITY BAND)
     2. ANODE

SOLDERING FOOTPRINT*

$\frac{0.63}{0.025}$

$\frac{0.83}{0.033}$

$\frac{1.60}{0.063}$

$\frac{2.85}{0.112}$
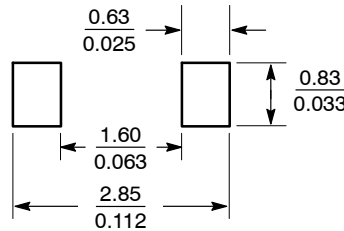
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

Mouser Electronics

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