Switching Diode

BAS16H

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

SOD−323
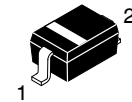**CASE 477**
STYLE 1

| 1 | | 2 |
| CATHODE | | ANODE |

MARKING DIAGRAM

A6 M

A6 = Specific Device Code
M = Date Code

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

ESD Rating: Human Body Model
    Machine Model
    Charged Device Model
	ESD	Class 3A
		Class M4
		Class C3	

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.
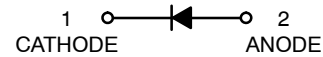
THERMAL CHARACTERISTICS

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.

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.

BAS16H

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.
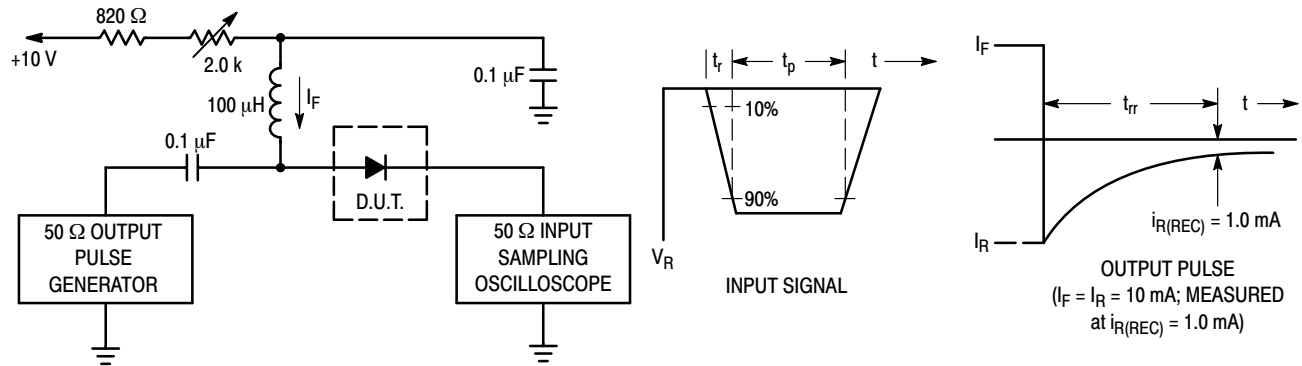
Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
3. t_p » t_{rr}

Figure 1. Recovery Time Equivalent Test Circuit

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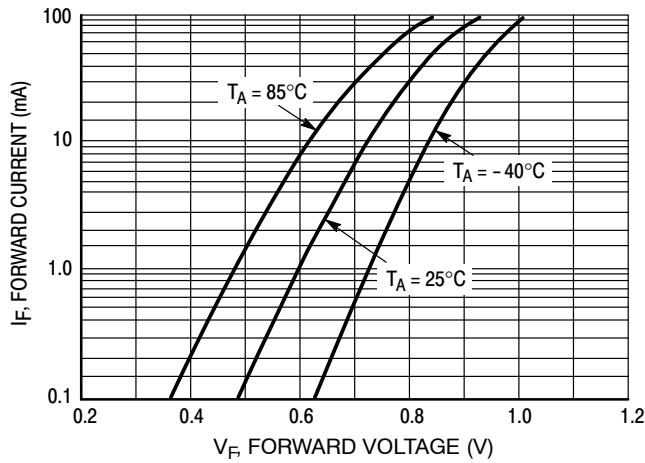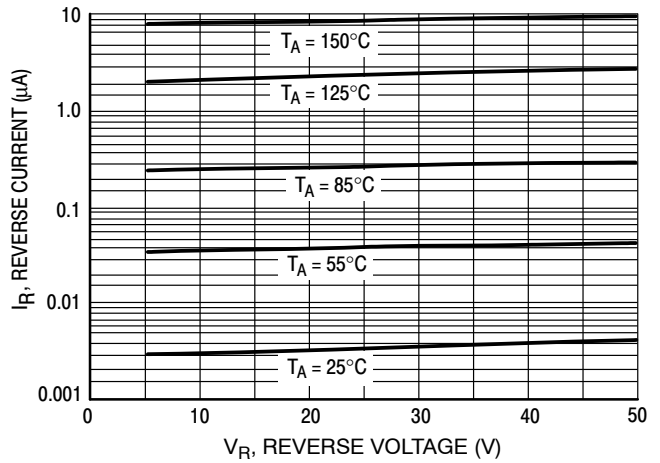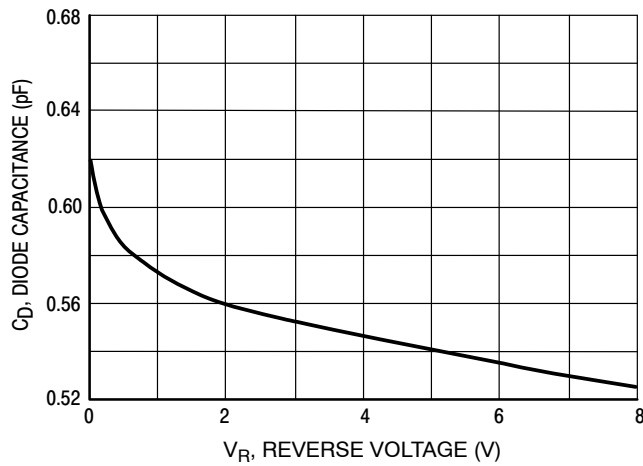
Figure 2. Forward Voltage
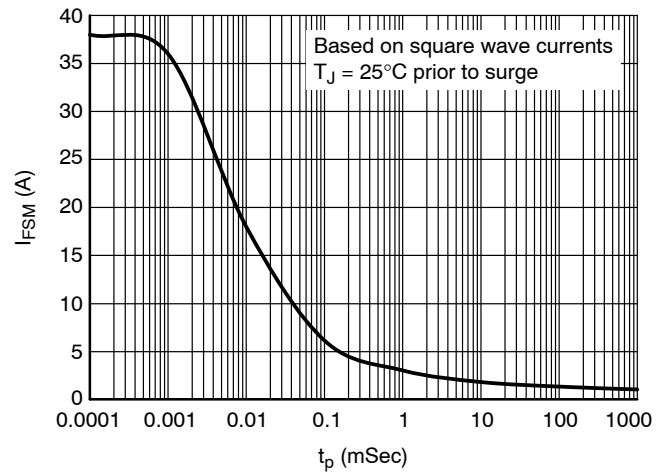
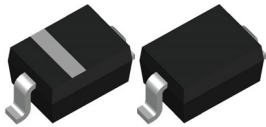**Figure 3. Leakage Current**
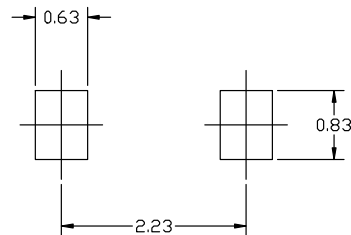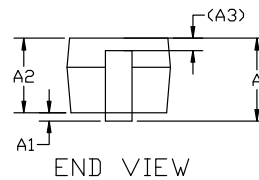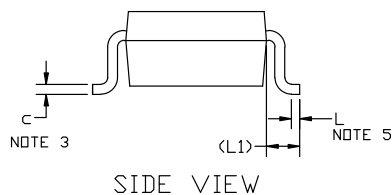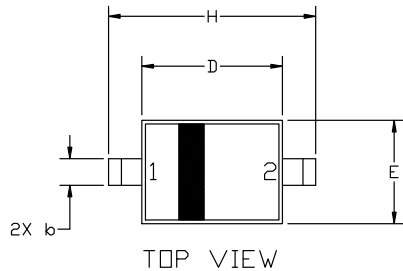
Figure 4. Capacitance

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

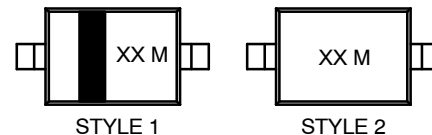**SOD−323 1.70x1.25x0.85**
CASE 477
ISSUE K

DATE 11 MAR 2024

NOTES:

1. DIMENSIONING AND TOLERANCING AS PER ASME Y14.5M, 2018.
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 MEASURE FROM END OF RADIUS.

TOP VIEW

2X b

SIDE VIEW

NOTE 3
NOTE 5
(L1)

END VIEW

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.80	0.90	1.00
A1	0.00	0.05	0.10
A2	0.75	0.85	0.95
A3	0.15 (REF)		
b	0.25	0.32	0.4
c	0.09	0.12	0.18
D	1.60	1.70	1.80
E	1.15	1.25	1.35
H	2.30	2.50	2.70
L	0.08	---	---
L1	0.40 (REF)		

0.63

0.83

2.23

RECOMMENDED MOUNTING 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.

GENERIC
MARKING DIAGRAM*

XX M

STYLE 1

XX M

STYLE 2

XX = 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. Some products may not follow the Generic Marking.

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

STYLE 2:
NO POLARITY

DOCUMENT NUMBER:	98ASB17533C	
DESCRIPTION:	SOD−323 1.70x1.25x0.85	PAGE 1 OF 1

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical–documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales

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