

BAS16XV2T1, BAS16XV2T5, SBAS16XV2T1G

Switching Diode

Features

- High-Speed Switching Applications
- Lead Finish: 100% Matte Sn (Tin)
- Qualified Reflow Temperature: 260°C
- Extremely Small SOD-523 Package
- AEC-Q101 Qualified and PPAP Capable
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- Pb-Free Packages are Available

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V_R	75	V
Continuous Forward Current	I_F	200	mA
Peak Forward Surge Current	$I_{FM(surge)}$	500	mA
Repetitive Peak Forward Current	I_{FRM}	500	mA
Non-Repetitive Peak Forward Current (Square Wave, $T_J = 25^\circ\text{C}$ prior to surge) $t = 1\ \mu\text{s}$ $t = 1\ \text{ms}$ $t = 1\ \text{s}$	I_{FSM}	4.0 1.0 0.5	A

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

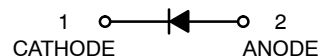
Characteristic	Symbol	Max	Unit
Total Device Dissipation, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	200 1.57	mW mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage Temperature	T_J, T_{stg}	-55 to 150	°C

1. FR-5 Minimum Pad.



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SOD-523
CASE 502
PLASTIC

MARKING DIAGRAM



A6 = Specific Device Code

M = Date Code

■ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

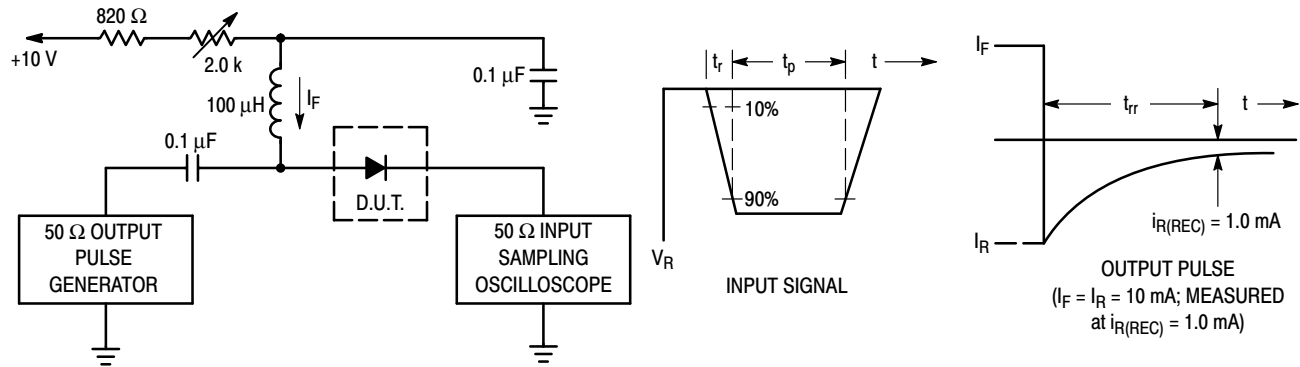
Device	Package	Shipping†
BAS16XV2T1	SOD-523	3000 / Tape & Reel
BAS16XV2T1G	SOD-523 (Pb-Free)	3000 / Tape & Reel
BAS16XV2T5G	SOD-523 (Pb-Free)	8000 / Tape & Reel
SBAS16XV2T1G	SOD-523 (Pb-Free)	3000 / Tape & Reel

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Voltage Leakage Current ($V_R = 75\text{ V}$) ($V_R = 75\text{ V}$, $T_J = 150^\circ\text{C}$) ($V_R = 25\text{ V}$, $T_J = 150^\circ\text{C}$)	I_R	– – –	1.0 50 30	μA
Reverse Breakdown Voltage ($I_{BR} = 100\text{ }\mu\text{A}$)	$V_{(BR)}$	75	–	V
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	– – – –	715 855 1000 1250	mV
Diode Capacitance ($V_R = 0$, $f = 1.0\text{ MHz}$)	C_D	–	2.0	pF
Forward Recovery Voltage ($I_F = 10\text{ mA}$, $t_r = 20\text{ ns}$)	V_{FR}	–	1.75	V
Reverse Recovery Time ($I_F = I_R = 10\text{ mA}$, $R_L = 50\text{ }\Omega$)	t_{rr}	–	6.0	ns
Stored Charge ($I_F = 10\text{ mA}$ to $V_R = 5.0\text{ V}$, $R_L = 500\text{ }\Omega$)	Q_S	–	45	pC



- Notes: 1. A 2.0 k Ω 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

BAS16XV2T1, BAS16XV2T5, SBAS16XV2T1G

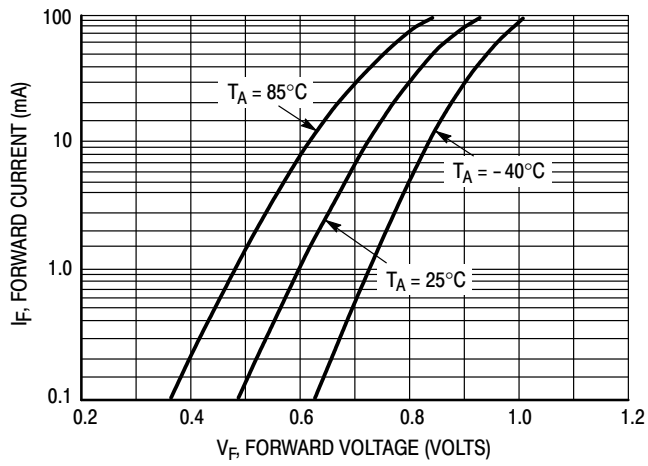


Figure 2. Forward Voltage

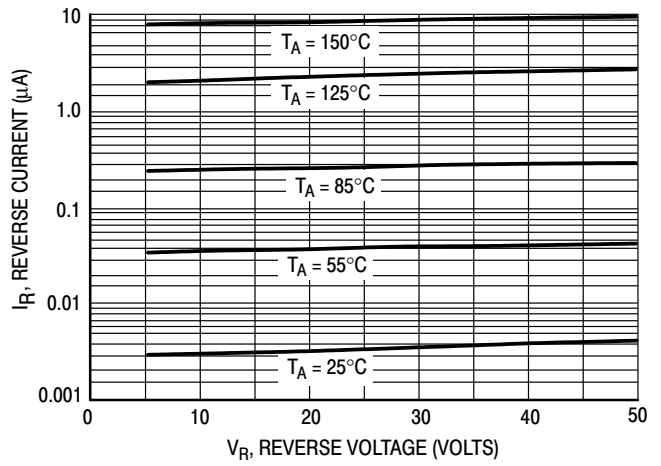


Figure 3. Leakage Current

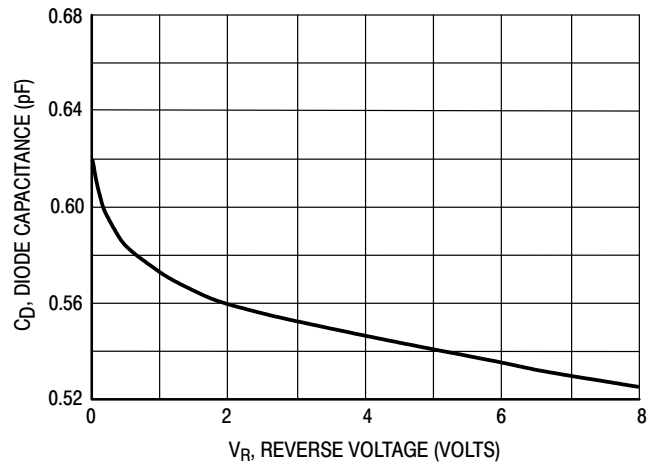
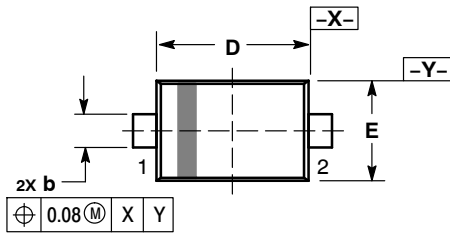


Figure 4. Capacitance

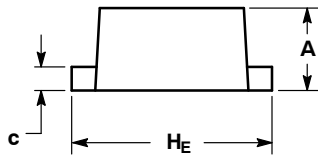
BAS16XV2T1, BAS16XV2T5, SBAS16XV2T1G

PACKAGE DIMENSIONS

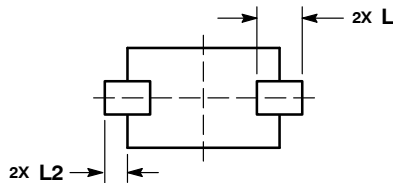
SOD-523
CASE 502-01
ISSUE E



TOP VIEW



SIDE VIEW



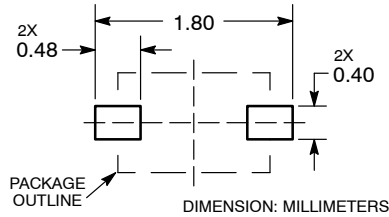
BOTTOM VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.60	0.70
b	0.25	0.30	0.35
c	0.07	0.14	0.20
D	1.10	1.20	1.30
E	0.70	0.80	0.90
H E	1.50	1.60	1.70
L	0.30 REF		
L2	0.15	0.20	0.25

RECOMMENDED 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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