

High Voltage Switching Diode

BAS21XV2

The BAS21XV2 Switching Diode is a spin-off of our popular SOT-23 three-leaded device. It is designed for switching applications and is housed in the SOD-523 surface mount package. This device is ideal for low-power surface mount applications, where board space is at a premium.

Features

- Extremely Small SOD-523 Package
- 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	250	Vdc
Repetitive Peak Reverse Voltage	V_{RRM}	250	Vdc
Continuous Forward Current	I_F	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	625	mAdc
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	I_{FRM}	500	mA
Non-Repetitive Peak Forward Current (Square Wave, $T_J = 25^\circ\text{C}$ prior to surge)	I_{FSM}		A
$t = 1 \mu\text{s}$		5.0	
$t = 1 \text{ms}$		2.0	
$t = 1 \text{s}$		0.5	

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board $T_A = 25^\circ\text{C}$	P_D	250	mW
Thermal Resistance Junction-to-Ambient (Note 1)	$R_{\theta JA}$	500	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	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.

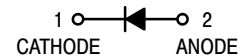
1. Mounted onto a 4 in square FR-4 board 10 mm sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.



ON Semiconductor®

www.onsemi.com

HIGH VOLTAGE SWITCHING DIODE



MARKING DIAGRAM



XX = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
BAS21XV2T5G	SOD-523 (Pb-Free)	8000 / Tape & Reel
NSVBAS21XV2T5G	SOD-523 (Pb-Free)	8000 / Tape & Reel

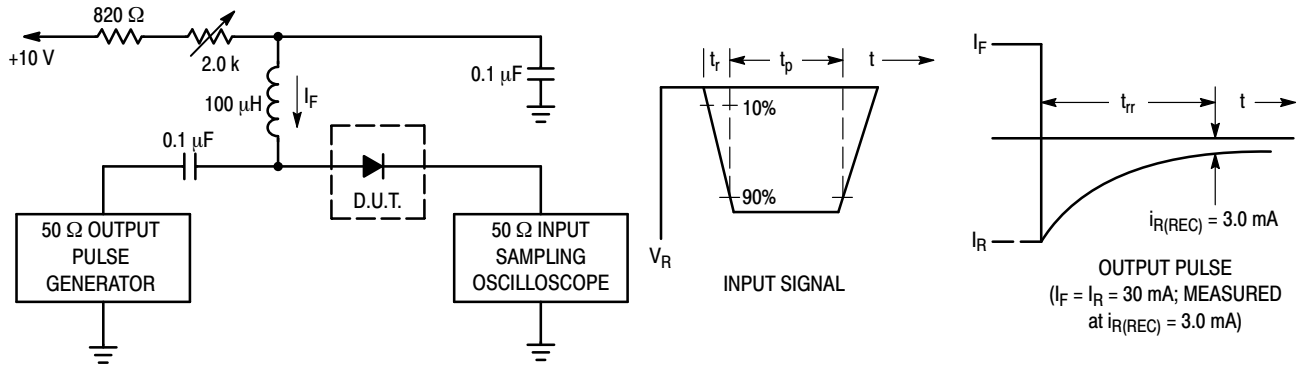
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

BAS21XV2

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Voltage Leakage Current ($V_R = 200\text{ Vdc}$) ($V_R = 200\text{ Vdc}$, $T_J = 150^\circ\text{C}$)	I_R	0.01 10	0.1 100	$\mu\text{A dc}$
Reverse Breakdown Voltage ($I_{BR} = 100\ \mu\text{A dc}$)	$V_{(BR)}$	250	–	Vdc
Forward Voltage ($I_F = 100\ \text{mA dc}$) ($I_F = 200\ \text{mA dc}$)	V_F	– –	1000 1250	mV
Diode Capacitance ($V_R = 0$, $f = 1.0\ \text{MHz}$)	C_D	–	5.0	pF
Reverse Recovery Time ($I_F = I_R = 30\ \text{mA dc}$, $R_L = 100\ \Omega$)	t_{rr}	–	50	ns

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 30 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 30 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

BAS21XV2

TYPICAL CHARACTERISTICS

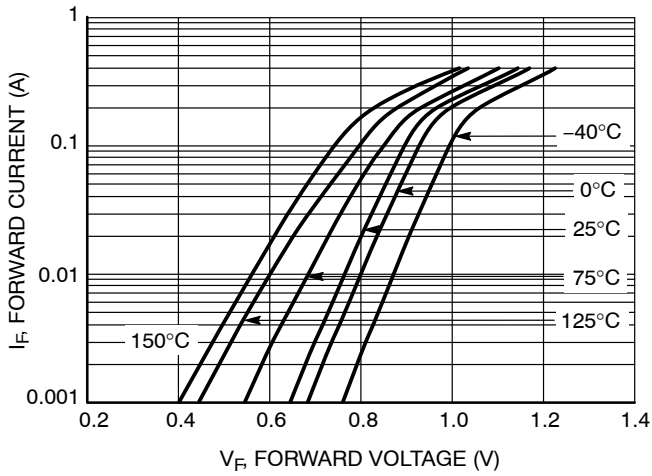


Figure 1. Forward Voltage

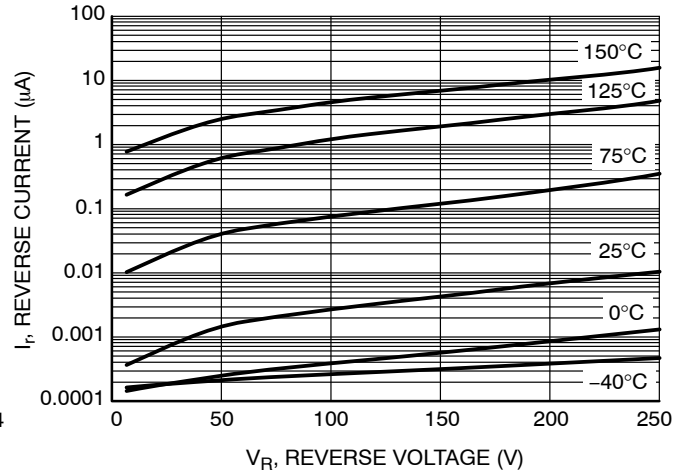


Figure 2. Reverse Current

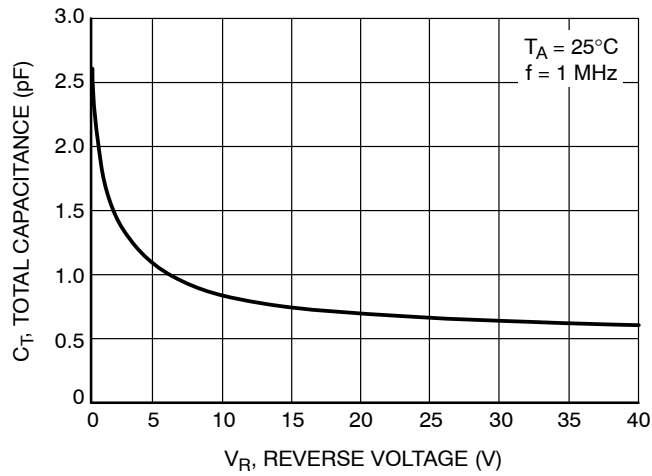
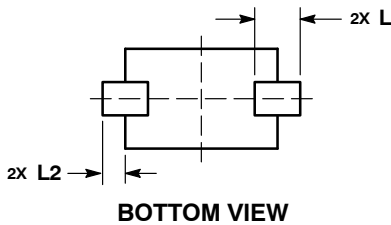
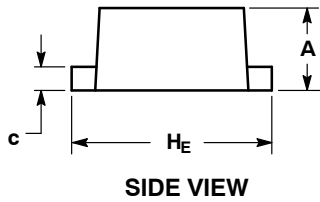
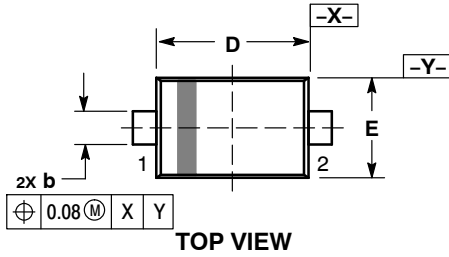


Figure 3. Total Capacitance

BAS21XV2

PACKAGE DIMENSIONS

SOD-523
CASE 502-01
ISSUE E

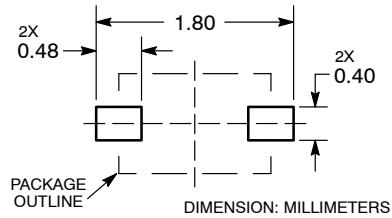


NOTES:

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.

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Email Requests to: orderlit@onsemi.com

TECHNICAL SUPPORT
North American Technical Support:
Voice Mail: 1 800-282-9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:
Phone: 00421 33 790 2910
For additional information, please contact your local Sales Representative

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Small Signal Switching Diodes](#) category:

Click to view products by [ON Semiconductor](#) manufacturer:

Other Similar products are found below :

[BAS16E6433HTMA1](#) [SHN2D02FUTW1T1G](#) [BAS 16-02L E6327](#) [BAS 16-02V H6327](#) [BAS 21U E6327](#) [BAS 28 E6327](#) [BAW56DWQ-7-F](#)
[BAW56M3T5G](#) [IDW40E65D1](#) [IDW40E65D2](#) [SMMSD4148T3G](#) [NSVDAN222T1G](#) [CDSZC01100-HF](#) [BAS28-7](#) [JANTX1N6640](#)
[BAW56HDW-13](#) [BAV99TQ-13-F](#) [SMSD1002T1G](#) [LS4148](#) [IDV15E65D2](#) [W0503RH200S0L](#) [M0268SJ200NLF](#) [M0268RJ200NLF](#)
[DAN217U-TP](#) [BAV21W-HE3_A-08](#) [BAV99-HE3_A-08](#) [BAW56-HE3_A-08](#) [BAS16-HE3_A-08](#) [BAS16D-HE3_A-08](#) [BAV19W-HE3_A-08](#)
[BAS20-HE3_A-08](#) [BAL99-HE3_A-08](#) [BAV23C-HE3_A-08](#) [DHVSD3004BRM-7](#) [DLLFSD01LP3Q-7](#) [BAS16VVQ-7](#)
[IDWD100E120D7XKSA1](#) [IDWD120E120D7XKSA1](#) [IDWD140E120D7XKSA1](#) [IDWD30E120D7XKSA1](#) [IDWD40E120D7XKSA1](#)
[IDWD50E120D7XKSA1](#) [IDWD60E120D7XKSA1](#) [IDWD75E120D7XKSA1](#) [BAS21TWQ-7](#) [BAV21WQ-7-F](#) [MMBD4448HADWQ-7-F](#)
[1N4148WSQ-13-F](#) [BAW56WQ-7-F](#) [BAS716-TP](#)