

Is Now Part of



# **ON Semiconductor**®

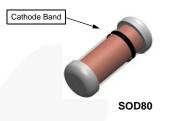
To learn more about ON Semiconductor, please visit our website at <u>www.onsemi.com</u>

ON Semiconductor and the ON Semiconductor logo 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 dates sheds, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor dates sheds 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 of others. ON Semiconductor products are not designed, intended, or authorized for use on similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor and its officers, employees, subsidiaries, affliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out or i, directly or indirectly, any lay bed ON Semiconductor and its officers, employees, ween if such claim alleges that ON Semiconductor was negligent regarding the d

April 2013



## BAV102 High Voltage, General Purpose Diode



## Description

A general purpose diode that couples high forward conductance fast swiching speed and high blocking voltages in a glass leadless LL-34 surface mount package. Placement of the expansion gap has no relationship to the location of the cathode terminal which is indicated by the first color band.

## Absolute Maximum Ratings<sup>(1)</sup>

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^{\circ}$ C unless otherwise noted.

Symbol	Parameter	Value	Units	
W <sub>IV</sub>	Working Inverse Voltage	150	V	
Ι <sub>Ο</sub>	Average Rectified Current		200	mA
۱ <sub>F</sub>	DC Forward Current		500	mA
i <sub>f</sub>	Recurrent Peak Forward Current		600	mA
I <sub>FSM</sub>	Non-repetitive Peak Forward Current	Pulse Width = 1.0 s	1.0	A
		Pulse Width = 1.0 µs	4.0	A
T <sub>STG</sub>	Storage Temperature Range		-65 to +200	°C
ТJ	Operating Junction Temperature		-65 to +200	°C

Note:

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

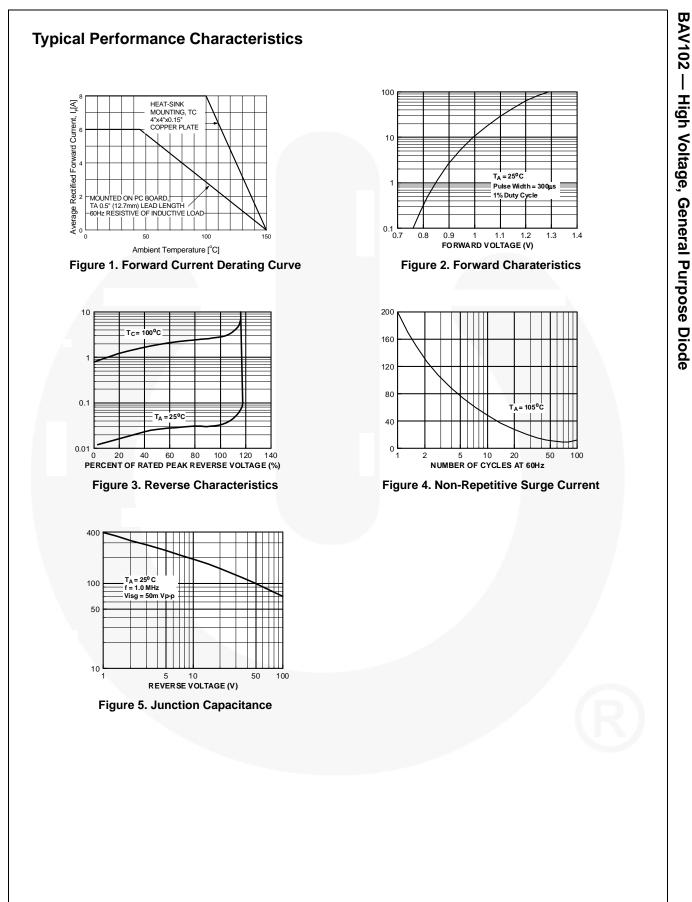
## Thermal Characteristics

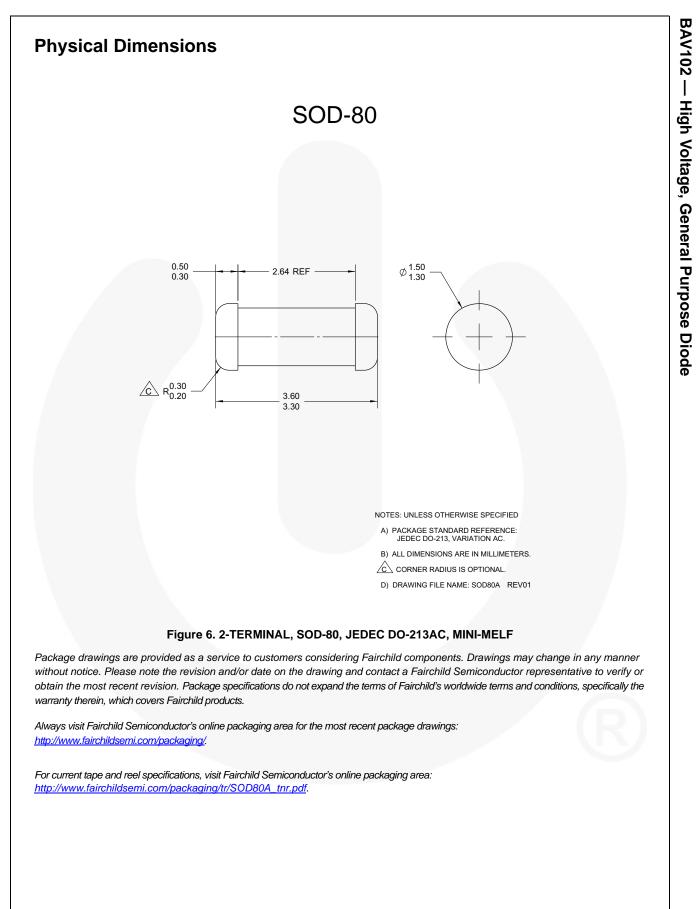
Symbol	Parameter	Value	Units
PD	Power Dissipation	500	mW
	Linear Derating Factor from $T_A = 25^{\circ}C$	3.33	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	350	°C/W

## **Electrical Characteristics**

Values are at  $T_C = 25^{\circ}C$  unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Units
V <sub>R</sub>	Breakdown Voltage	I <sub>R</sub> = 100 μA	200		V
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 100 mA		1.00	V
		I <sub>F</sub> = 200 mA		1.25	V
I <sub>R</sub>	Reverse Current	V <sub>R</sub> = 150 V		100	nA
		$V_{R} = 150 \text{ V}, \text{ T}_{A} = 150^{\circ}\text{C}$		100	μΑ
CT	Total Capacitance	V <sub>R</sub> = 0, f = 1.0 MHz		5.00	pF
t <sub>rr</sub>	Reverse Recovery Time	$I_F = I_R = 30 \text{ mA}, I_{RR} = 1 \text{ mA}$ $R_L = 100 \Omega$		50	ns





### FAIRCHILD

SEMICONDUCTOR\*

#### TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

2Cool™ AccuPower™ AX-CAP®, BitSiC™ Build it Now™ CorePLUS™ CorePOWER™ **CROSSVOLT™** CTL™ Current Transfer Logic™ DEUXPEED® Dual Cool™ EcoSPARK<sup>®</sup> EfficientMax™ ESBC™ R F Fairchild® Fairchild Semiconductor® FACT Quiet Series™ FACT FAST® FastvCore™

FPS™ F-PFS™ **FRFET**® Global Power Resource<sup>SM</sup> GreenBridge™ Green FPS™ Green FPS™ e-Series™ Gmax™ GTO™ IntelliMAX™ ISOPLANAR™ Making Small Speakers Sound Louder and Better MegaBuck™ MICROCOUPLER™ MicroFET™ MicroPak™ MicroPak2™ MillerDrive™ MotionMax™ mWSaver™ OptoHiT™ **OPTOLOGIC<sup>®</sup> OPTOPLANAR<sup>®</sup>** 

PowerTrench<sup>®</sup> PowerXS™ Programmable Active Droop™ **QFET** QS™ Quiet Series™ RapidConfigure™ Saving our world, 1mW/W/kW at a time™ SignalWise™ SmartMax™ SMART START™ Solutions for Your Success™ SPM<sup>®</sup> STEAL TH™ SuperFET<sup>®</sup> SuperSOT™-3 SuperSOT™-6 SuperSOT™-8 SupreMOS<sup>®</sup> SyncFET™

TinyBoost™ TinyBuck™ TinyCalc™ TinyLogic<sup>®</sup> TINYOPTO™

TinyPower™

TinyPWM™

Sync-Lock™

TinyWire™ TranSiC™ TriFault Detect™ TRUECURRENT®\* µSerDes™

UHC<sup>®</sup> Ultra FRFET™ UniFET™ VCX™ VisualMax™ VoltagePlus™ XS™

\* Trademarks of System General Corporation, used under license by Fairchild Semiconductor.

#### DISCLAIMER

FETBench™

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

#### LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

#### As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
- A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

#### ANTI-COUNTERFEITING POLICY

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, www.fairchildsemi.com, under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers by either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to by buying direct or from authorized distributors.

#### PRODUCT STATUS DEFINITIONS

Datasheet Identification	Product Status	Definition	
Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.	
Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.	
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.	
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.	
		Rev. 164	

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 <u>www.onsemi.com/site/pdf/Patent-Marking.pdf</u>. 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 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 has against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death ass

#### PUBLICATION ORDERING INFORMATION

#### LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com N. American Technical Support: 800–282–9855 Toll Free USA/Canada Europe, Middle East and Africa Technical Support: Phone: 421 33 790 2910

Japan Customer Focus Center Phone: 81-3-5817-1050 ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

© Semiconductor Components Industries, LLC