Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Features

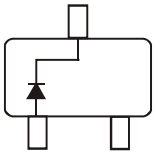
- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- High Conductance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **An Automotive-Compliant Part is Available Under Separate Data Sheet (BAS21WQ)**

Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208 (e3)
- Lead-Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe)
- Weight: 0.006 grams (Approximate)

SOT323

Top View



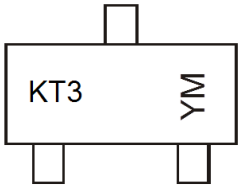
Top View
Internal Schematic

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
BAS19W-7-F	AEC-Q101	SOT323	3,000/Tape & Reel
BAS20W-7-F	AEC-Q101	SOT323	3,000/Tape & Reel
BAS21W-7-F	AEC-Q101	SOT323	3,000/Tape & Reel
BAS21W-13-F	AEC-Q101	SOT323	10,000/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http://www.diodes.com/products/packages.html

Marking Information



KT3 = Product Type Marking Code
YM = Date Code Marking
Y = Year ex: B = 2014
M = Month ex: 9 = September

Date Code Key

Year	2000	2001	…	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Code	L	M	…	W	X	Y	Z	A	B	C	D	E	F

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	BAS19W	BAS20W	BAS21W	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	120	200	250	V
Working Peak Reverse Voltage DC Blocking Voltage	V_{RWM} V_R	100	150	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	71	106	141	V
Forward Continuous Current (Note 5)	I_{FM}	400			mA
Average Rectified Output Current (Note 5)	I_O	200			mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0µs @ t = 1.0s	I_{FSM}	2.5 0.5			A
Repetitive Peak Forward Surge Current	I_{FRM}	625			mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J , T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	BAS19W BAS20W BAS21W	$V_{(BR)R}$	120 200 250	— — —	V	I_R = 100µA
Forward Voltage		V_F	—	1.0 1.25	V	I_F = 100mA I_F = 200mA
Reverse Current @ Rated DC Blocking Voltage (Note 6)		I_R	—	100 15	nA µA	T_J = +25°C T_J = +100°C
Total Capacitance		C_T	—	5.0	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time		t_{RR}	—	50	ns	I_F = I_R = 30mA, I_{RR} = 0.1 x I_R, R_L = 100Ω

Notes: 5. Part mounted on FR-4 PC board with minimum recommended pad layout per Diodes Inc.'s website at http://www.diodes.com/package-outlines.html.
6. Short duration pulse test used to minimize self-heating effect.

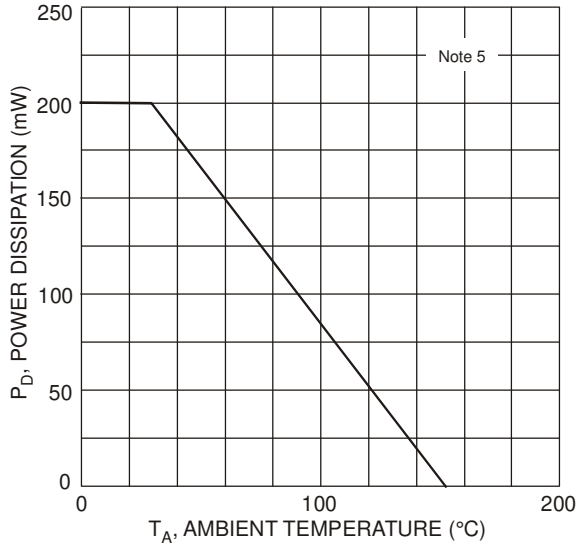


Fig. 1 Power Derating Curve

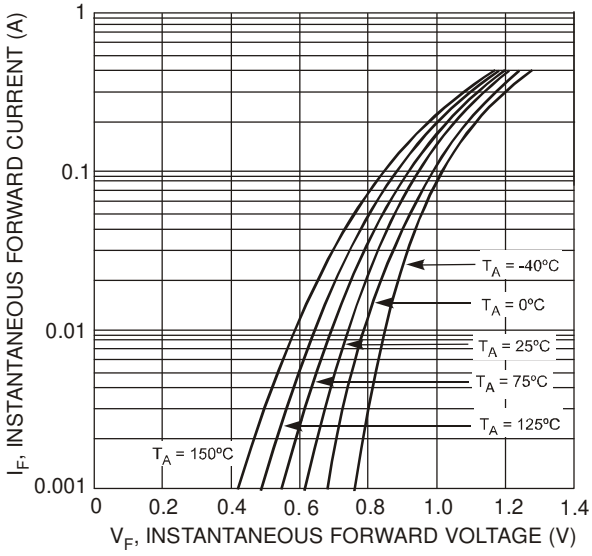


Fig. 2 Typical Forward Characteristics

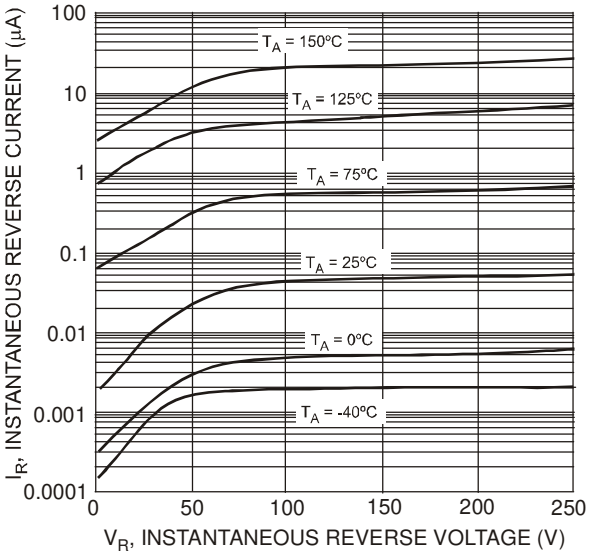


Fig. 3 Typical Reverse Characteristics

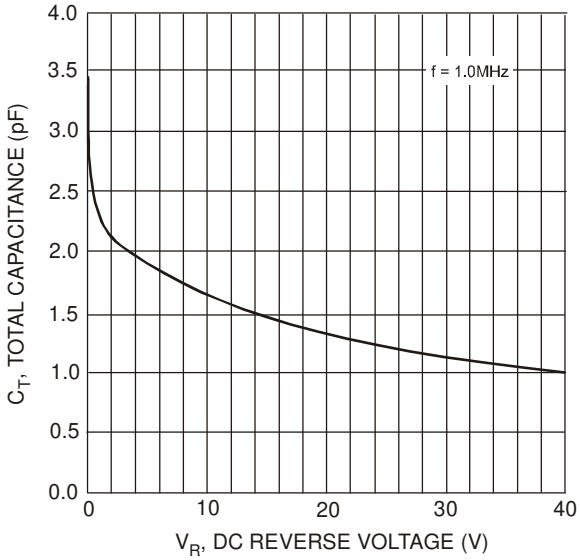
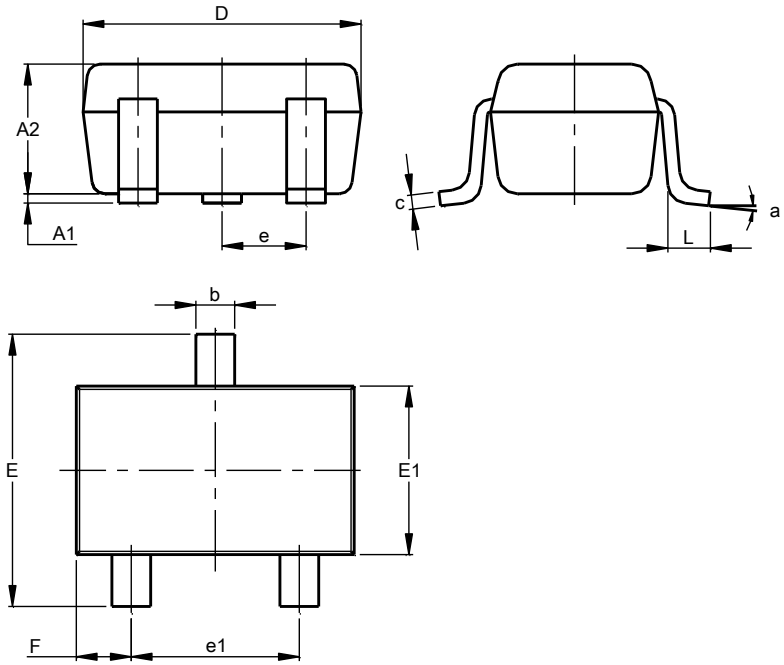


Fig. 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT323

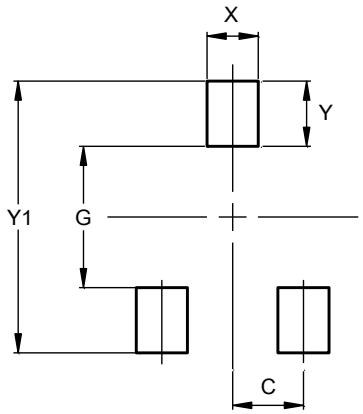


SOT323			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	–
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or

2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

www.diodes.com