



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

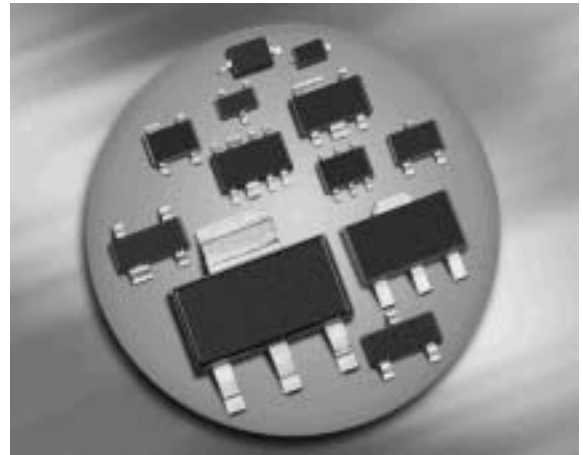
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

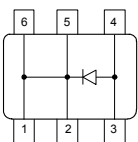


Schottky Rectifier Diode

- Reverse voltage: 30 V
- Forward current: 2 A
- Low forward voltage: 0.53 V typ. @ 2 A
- Low leakage current 40 μ A typ. @ 30 V
- Low capacitance: 30 pF typ. @ 5 V
- High ESD / transient robustness according to:
 - ESD (HBM): Class 3 B (> 8000 V)
 - ESD (MM): Class C (> 400 V)
 - ISO7637-2: Pulse 1 (-100 V, 2 ms)
 - Pulse 2 (-300 V, 50 μ s)
 - Pulse 3 (-400 V, 100 ns)
- For high efficiency DC/DC conversion, fast switching, polarity protection, rectification and clamping applications
- Very small SMD package (2.0 x 1.25 x 0.9 mm³) with improved operating temperature range due to extra-low thermal resistance design (see attached Forward current curves)
- Ideal to replace SMA packages with significant size advantage
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101



BAS3020B



Type	Package	Configuration	Marking
BAS3020B	SOT363	single	E9s

Maximum Ratings at $T_A = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage ¹⁾	V_R	30	V
Peak reverse voltage ¹⁾	V_{RM}	30	
RMS reverse voltage ¹⁾	$V_{R(RMS)}$	21	
Forward current ¹⁾²⁾ , $T_S \leq 96\text{ °C}$	I_F	2	A
Repetitive peak forward current ²⁾ ($t_p \leq 1\text{ ms}$, $D \leq 0.5$)	I_{FRM}	3.5	
Non-repetitive peak surge forward current ²⁾ ($t \leq 10\text{ ms}$)	I_{FSM}	10	
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ³⁾	R_{thJS}	≤ 42	K/W

Electrical Characteristics at $T_A = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Reverse current ⁴⁾	I_R	-	5	25	μA
$V_R = 5\text{ V}$					
$V_R = 10\text{ V}$					
$V_R = 30\text{ V}$					
Forward voltage ⁴⁾	V_F	-	350	410	mV
$I_F = 500\text{ mA}$					
$I_F = 1\text{ A}$					
$I_F = 2\text{ A}$					

¹⁾For $T_A > 25\text{ °C}$ the derating of V_R and I_F has to be considered. Please refer to the attached curves.

²⁾Only valid if pins 3 and 4 are connected in parallel.

³⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance.

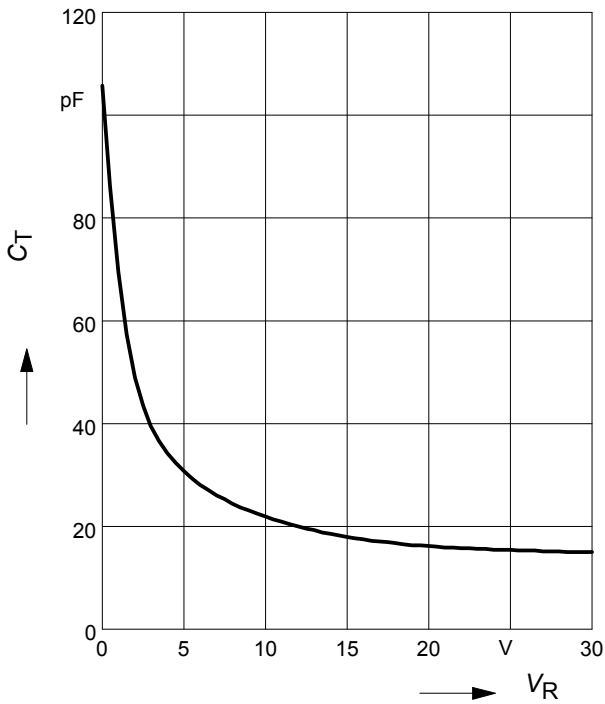
⁴⁾Pulsed test: $t_p \leq 300\text{ }\mu\text{s}$; $D = \leq 0.02$

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance	C_T				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		-	60	70	
$V_R = 5\text{ V}, f = 1\text{ MHz}$		-	30	40	
$V_R = 10\text{ V}, f = 1\text{ MHz}$		-	20	30	

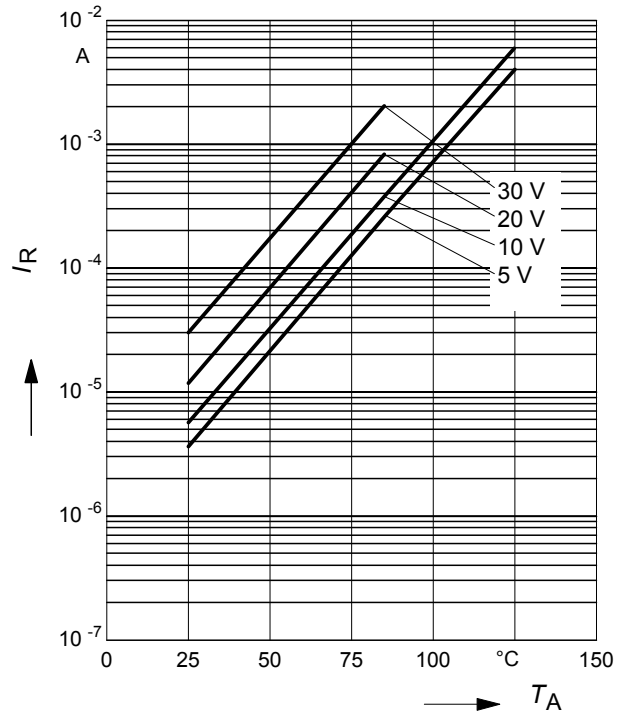
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



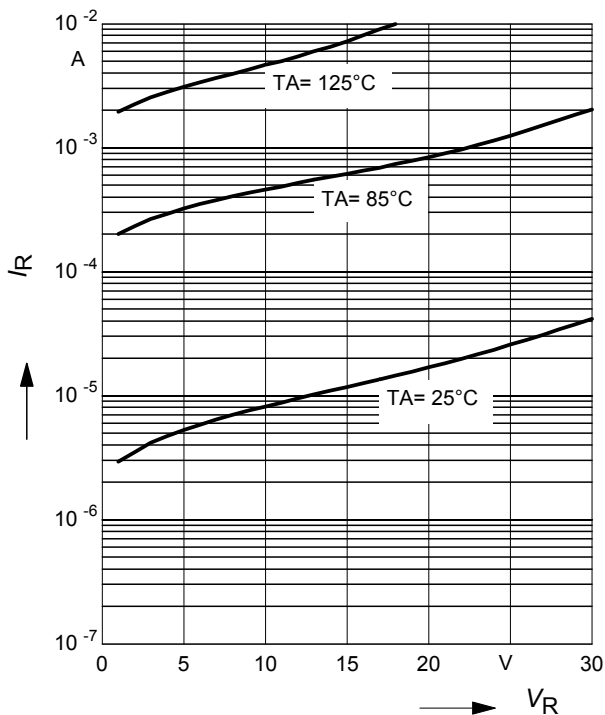
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



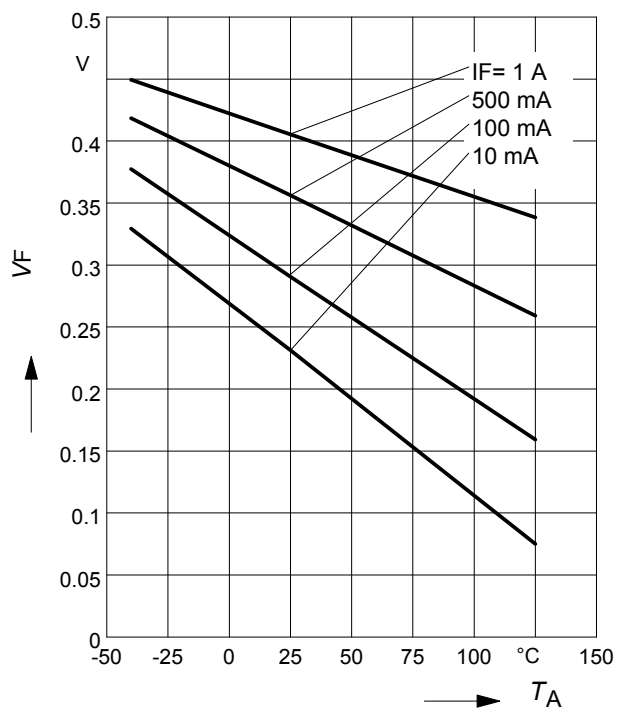
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



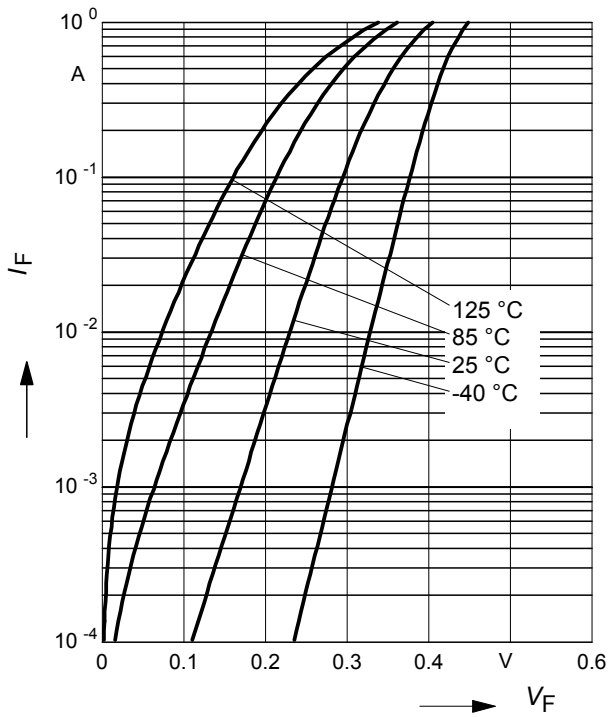
Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



Forward current $I_F = f(V_F)$

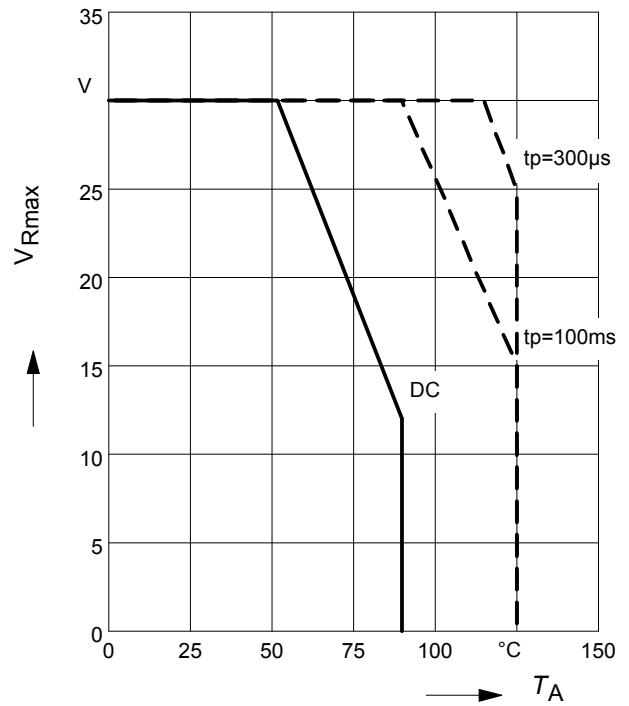
T_A = Parameter



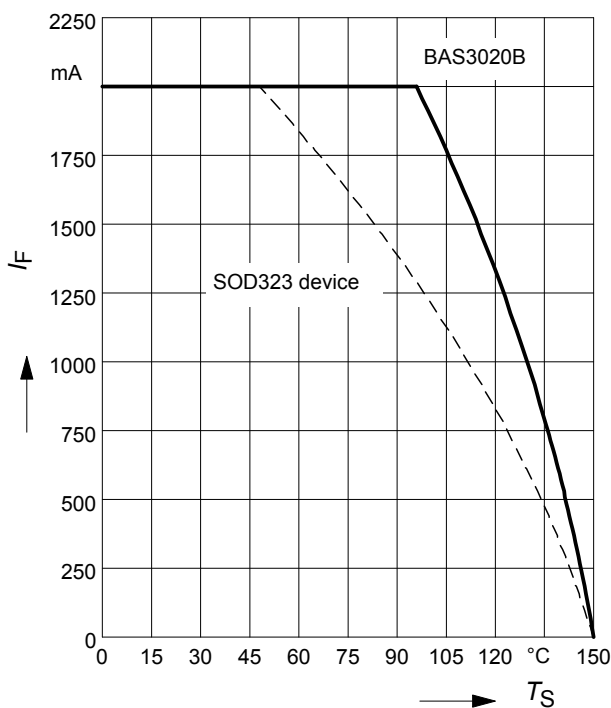
Permissible Reverse voltage $V_R = f(T_A)$

t_p = Parameter, Duty cycle < 0.01

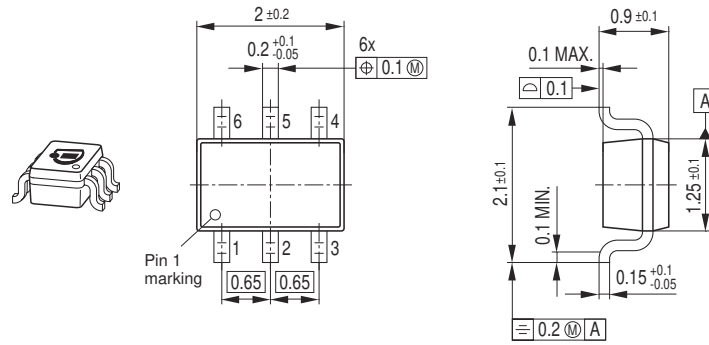
Device mounted on PCB with $R_{th} = 160$ k/W



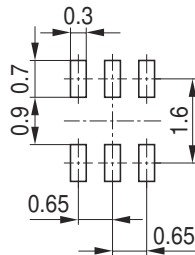
Forward current $I_F = f(T_S)$



Package Outline

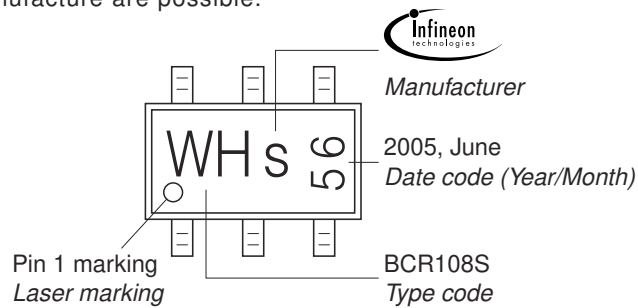


Foot Print



Marking Layout (Example)

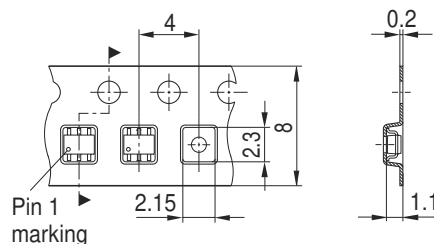
Small variations in positioning of Date code, Type code and Manufacturer are possible.



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel

For symmetric types no defined Pin 1 orientation in reel.



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

© Infineon Technologies AG 2007.

All Rights Reserved.

Attention please!

The information given in this dokument shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.infineon.com).

Warnings

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system.

Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.