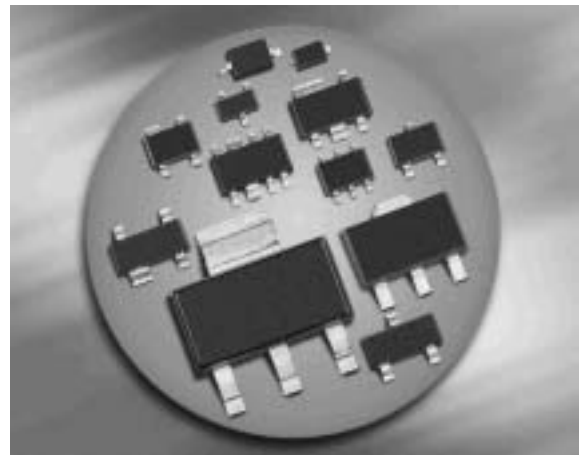
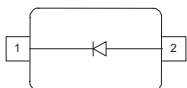


Medium Power AF Schottky Diode

- Forward current: 750 mA
Reverse voltage: 40 V
- For low-loss, fast-recovery, meter protection, bias isolation and clamping applications
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



BAT165



ESD (Electrostatic discharge) sensitive device, observe handling precaution!

Type / Ordering code	Package	Configuration	Marking
BAT165 / BAT165E6327HTSA1	SOD323	single	C/White

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

Parameter	Symbol	Value	Unit
Diode reverse voltage ²⁾	V_R	40	V
Forward current ²⁾	I_F	750	mA
Average rectified forward current (50/60Hz, sinus)	I_{FAV}	500	mA
Non-repetitive peak surge forward current ($t \leq 10\text{ms}$)	I_{FSM}	2.5	A
Total power dissipation $T_S \leq 93^\circ\text{C}$	P_{tot}	600	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ³⁾	R_{thJS}	≤ 95	K/W

¹⁾Pb-containing package may be available upon special request

²⁾For $T_A > 25^\circ\text{C}$ the derating of V_R and I_F has to be considered. Please refer to the attached curves.

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

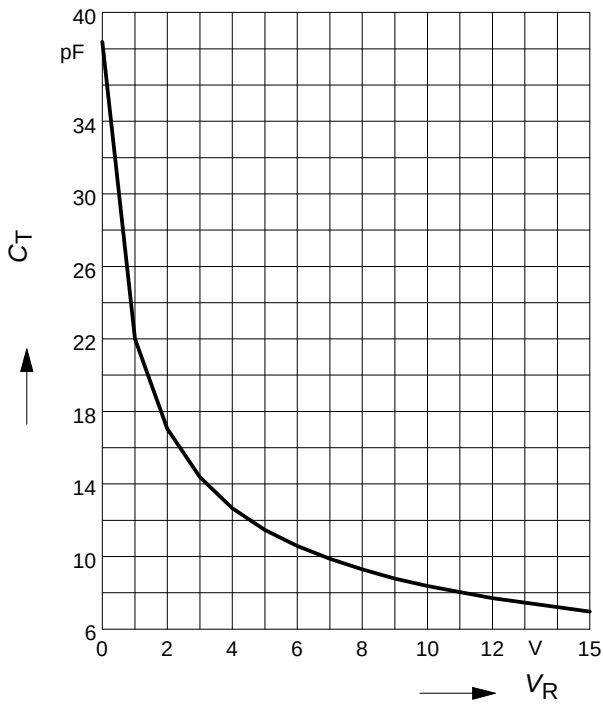
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current ¹⁾	I_R				μA
$V_R = 30\text{ V}$		-	-	12	
$V_R = 40\text{ V}$		-	-	50	
$V_R = 40\text{ V}, T_A = 65\text{ }^{\circ}\text{C}$		-	-	900	
Forward voltage	V_F				V
$I_F = 10\text{ mA}$		0.23	0.315	0.4	
$I_F = 100\text{ mA}$		0.32	0.39	0.47	
$I_F = 250\text{ mA}$		0.35	0.44	0.54	
$I_F = 750\text{ mA}$		0.44	0.58	0.74	
AC Characteristics					
Diode capacitance	C_T	-	8.4	12	pF
$V_R = 10\text{ V}, f = 1\text{ MHz}$					

¹Pulsed test: $t_p = 300\text{ }\mu\text{s}$; $D = 0.01$

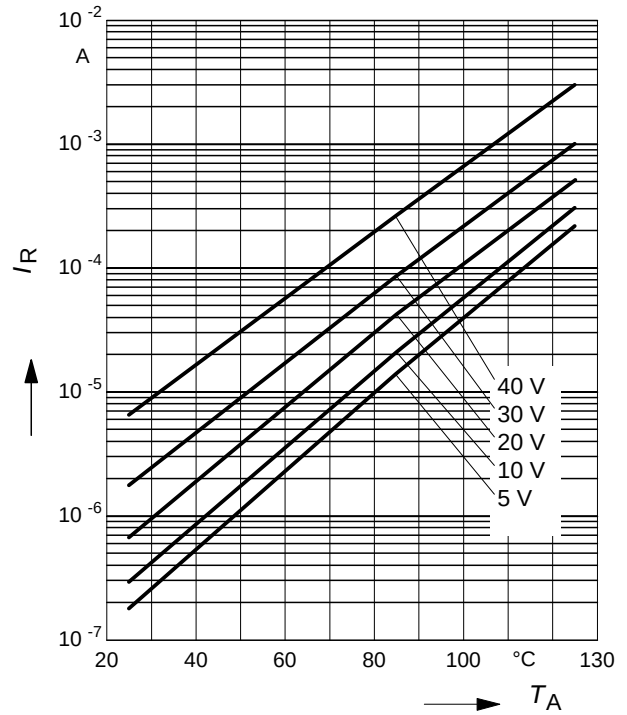
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



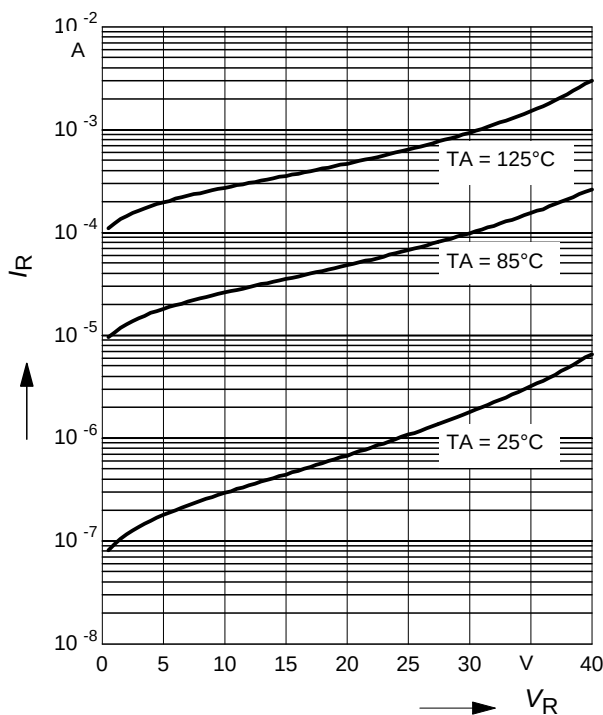
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



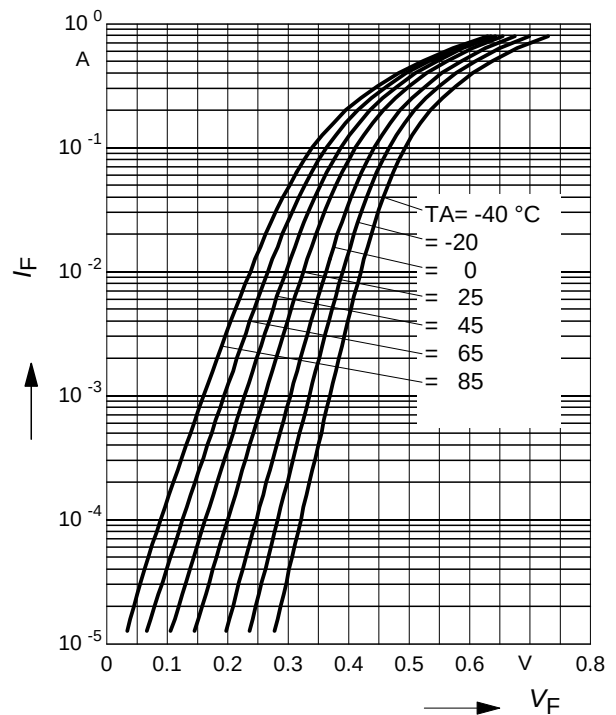
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



Forward current $I_F = f(V_F)$

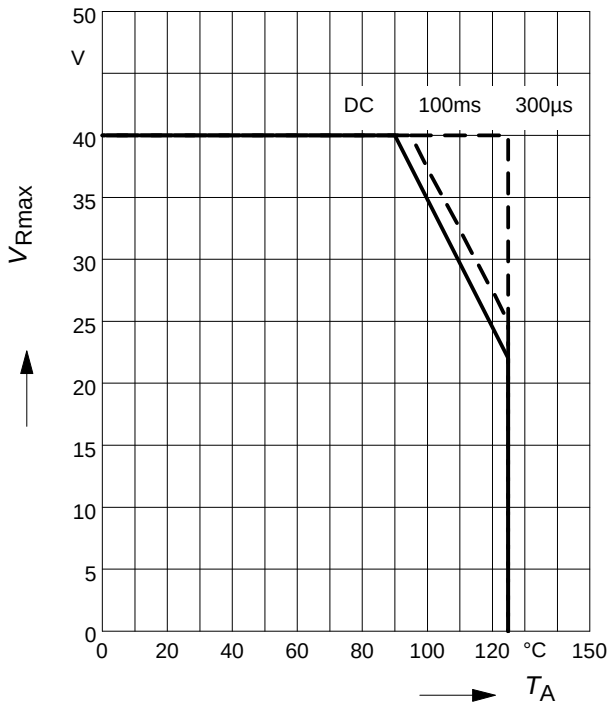
$T_A = \text{Parameter}$



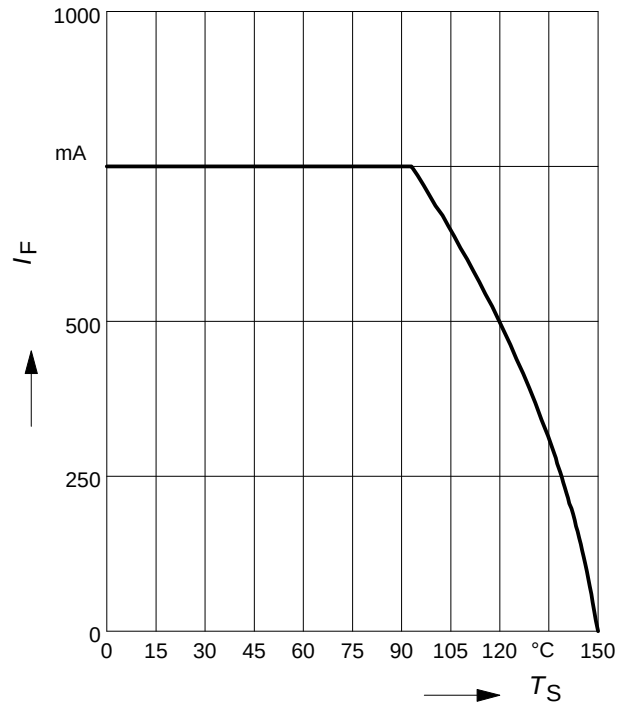
Permissible Reverse voltage $V_R = f(T_A)$

t_p = Parameter, Duty cycle < 0.01

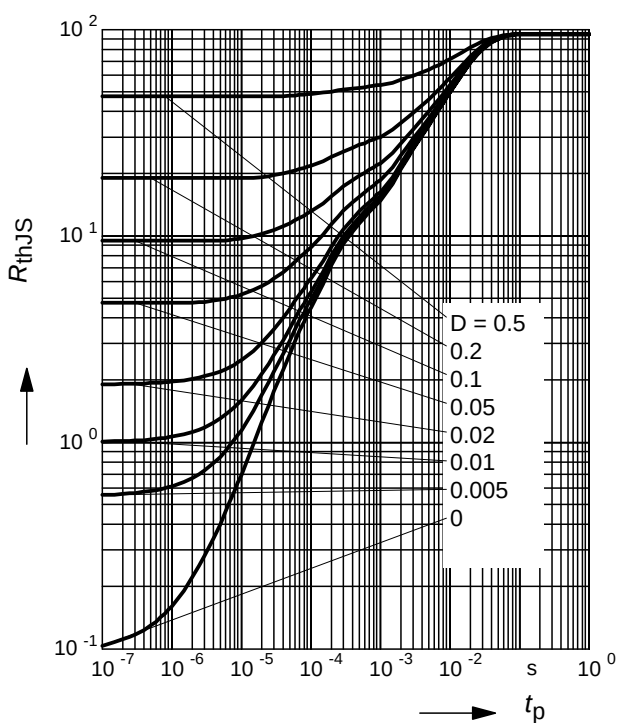
Device mounted on PCB with $R_{th} = 160 \text{ k/W}$



Forward current $I_F = f(T_S)$

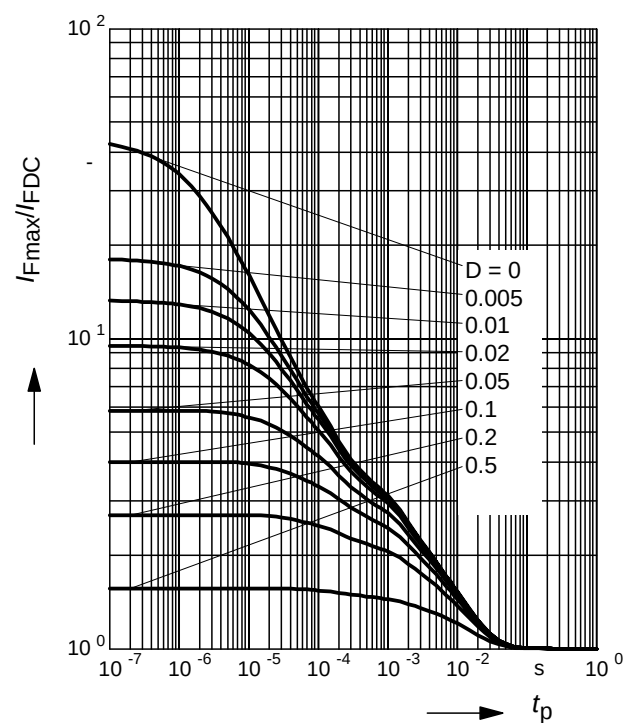


Permissible Puls Load $R_{thJS} = f(t_p)$

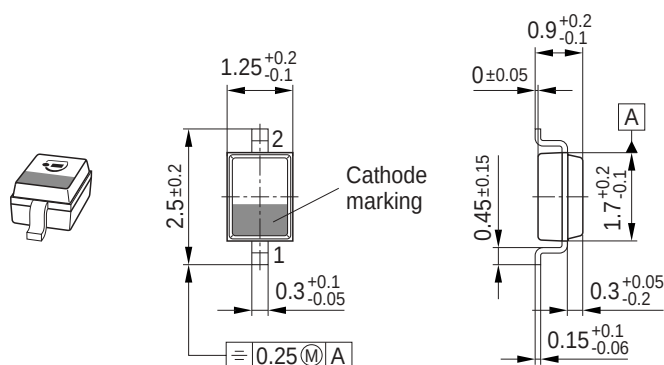


Permissible Pulse Load

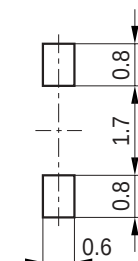
$$I_{Fmax}/I_{FDC} = f(t_p)$$



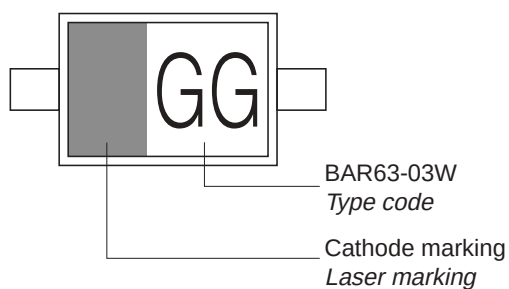
Package Outline



Foot Print

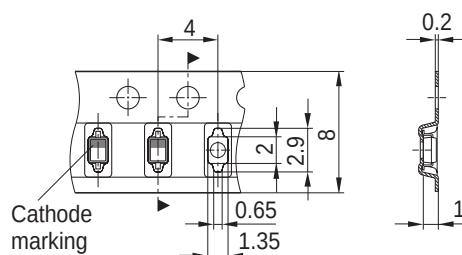


Marking Layout (Example)



Standard Packing

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