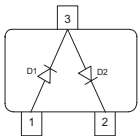


Silicon PIN Diode Array

- Surge protection device
- Designed for surge overvoltage clamping in antiparallel connection
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101


BAR66


Type	Package	Configuration	L_S (nH)	Marking
BAR66	SOT23	series	1.8	PMs

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	150	V
Forward current	I_F	200	mA
Total power dissipation $T_S \leq 25^\circ\text{C}$	P_{tot}	250	mW
ESD contact discharge ²⁾	V_{ESD}	25	kV
Peak pulse current ($t_p = 8 / 20 \mu\text{s}$) ³⁾	I_{pp}	12	A
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ⁴⁾ , BAR 66	R_{thJS}	≤ 290	K/W

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

²⁾ V_{ESD} according to IEC61000-4-2, only valid if pin 1 and pin 2 are connected

³⁾ I_{pp} according to IEC61000-4-5, only valid if pin 1 and pin 2 are connected

⁴⁾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					
Breakdown voltage $I_{(BR)} = 5 \mu\text{A}$	$V_{(BR)}$	150	-	-	V
Reverse current $V_R = 100 \text{ V}$	I_R	-	-	20	nA
Forward voltage $I_F = 50 \text{ mA}$	V_F	-	0.95	1.2	V
Clamping voltage $V_{ESD} = \pm 15 \text{ kV (contact)}^1$ $I_{PP} = 12 \text{ A}, t_p = 8/20 \mu\text{s}^2$	V_{CL}	-	tbd	-	
		-	7	-	

AC Characteristics

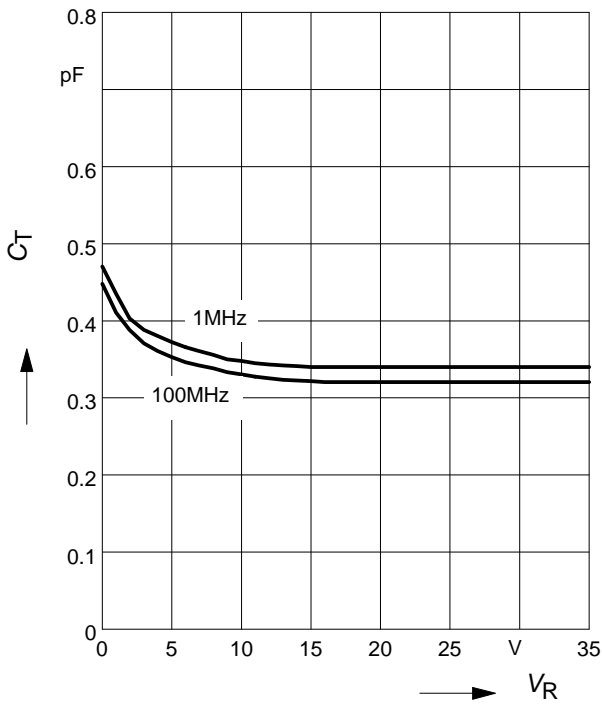
Diode capacitance $V_R = 35 \text{ V}, f = 1 \text{ MHz}$ $V_R = 0 \text{ V}, f = 100 \text{ MHz}$	C_T	-	0.4	0.6	pF
		-	0.35	0.9	
Zero bias conductance $V_R = 0 \text{ V}, f = 1 \text{ GHz}$	g_P	-	220	-	μS
Forward resistance $I_F = 5 \text{ mA}, f = 100 \text{ MHz}$	r_f	-	1.5	1.8	Ω
Charge carrier life time $I_F = 10 \text{ mA}, I_R = 6 \text{ mA}$, measured at $I_R = 3 \text{ mA}$, $R_L = 100 \Omega$	τ_{rr}	-	0.7	-	μs

¹ V_{ESD} according to IEC61000-4-2, only valid if pin 1 and pin 2 are connected

² I_{pp} according to IEC61000-4-5, only valid if pin 1 and pin 2 are connected

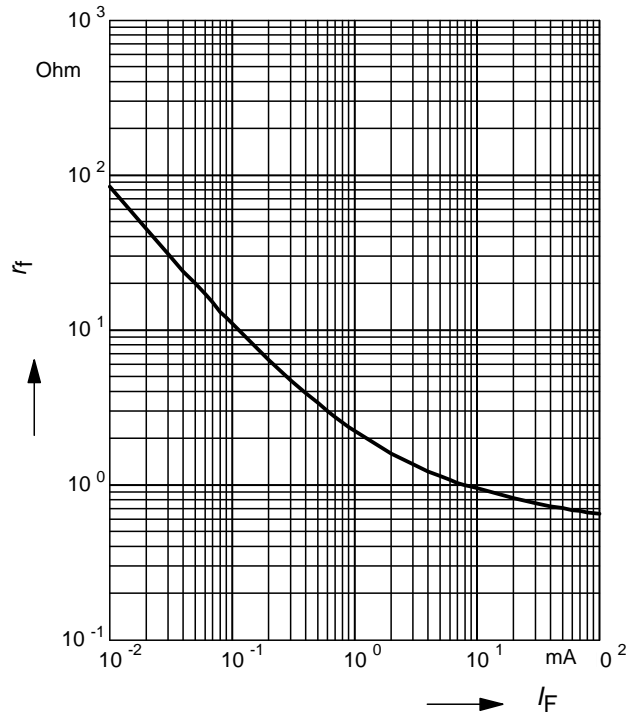
Diode capacitance $C_T = f(V_R)$

$f =$ Parameter



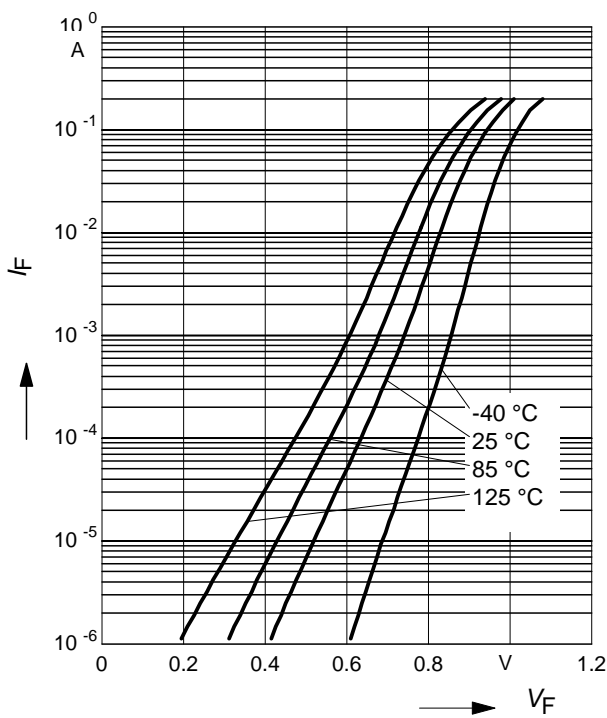
Forward resistance $r_f = f(I_F)$

$f = 100\text{MHz}$



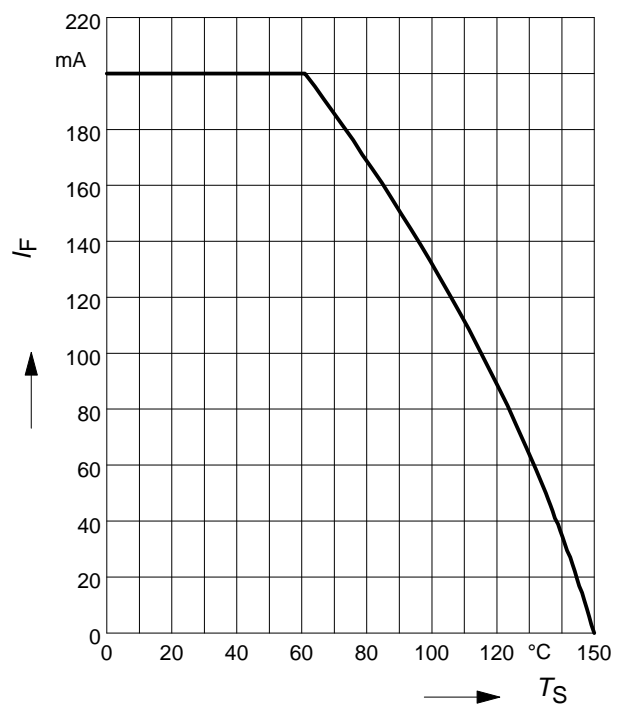
Forward current $I_F = f(V_F)$

$T_A =$ Parameter



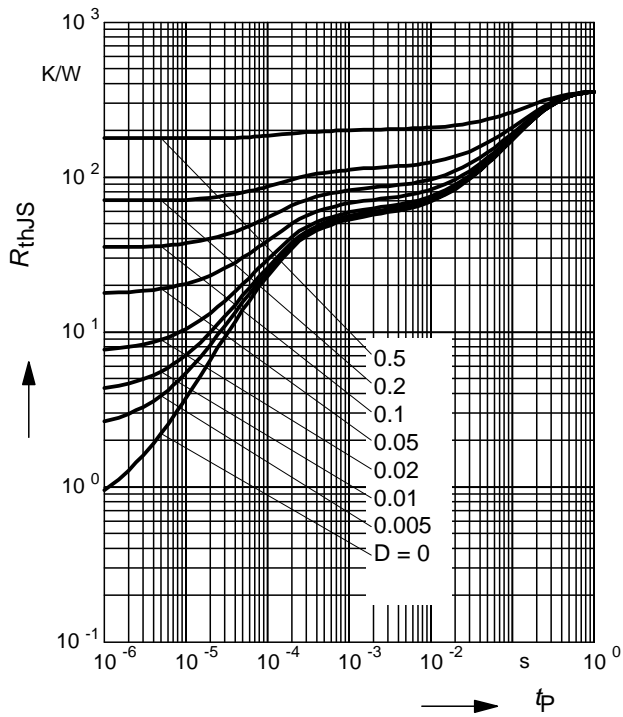
Forward current $I_F = f(T_S)$

BAR66



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

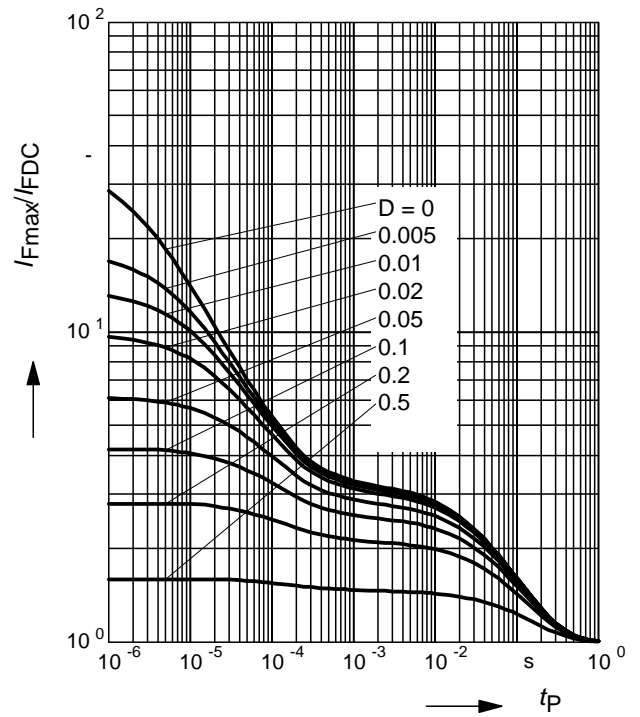
BAR66



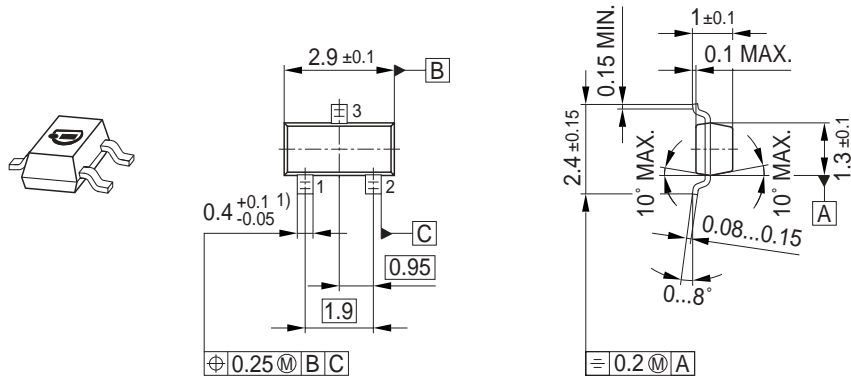
Permissible Pulse Load

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

BAR66



Package Outline



1) Lead width can be 0.6 max. in dambar area

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.