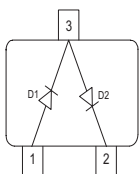


Silicon PIN Diode Array

- Surge protection device
- Designed for surge overvoltage clamping in antiparallel connection
- Pb-free (RoHS compliant) package



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 ¹⁾	V_{ESD}	25	kV
Peak pulse current ($t_p = 8 / 20 \mu\text{s}$) ²⁾	I_{pp}	12	A
Junction temperature	T_j	150	$^\circ\text{C}$
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ³⁾ , BAR 66	R_{thJS}	≤ 290	K/W

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

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

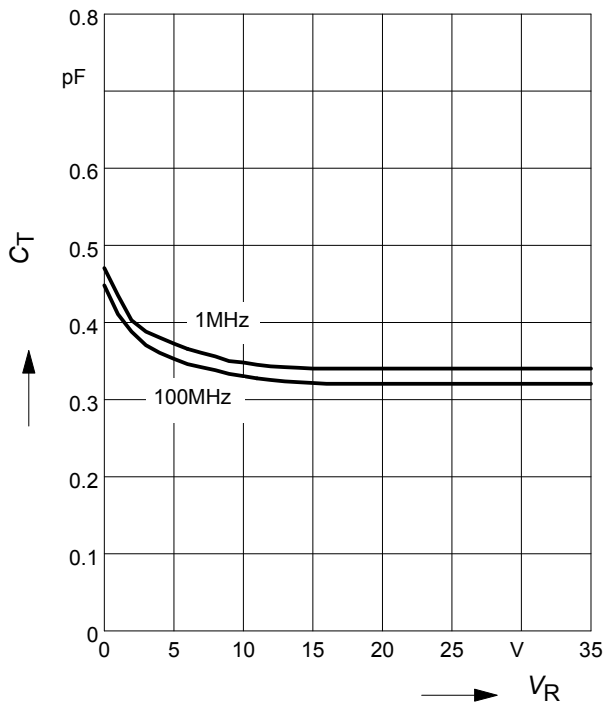
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 5 \mu A$	$V_{(BR)}$	150	-	-	V
Reverse current $V_R = 100 V$	I_R	-	-	20	nA
Forward voltage $I_F = 50 mA$	V_F	-	0.95	1.2	V
Clamping voltage $V_{ESD} = \pm 15 kV$ (contact) ¹⁾ $I_{PP} = 12 A, t_p = 8/20 \mu s^2)$	V_{CL}	- -	tbd 7	- -	
AC Characteristics					
Diode capacitance $V_R = 35 V, f = 1 MHz$ $V_R = 0 V, f = 100 MHz$	C_T	- -	0.4 0.35	0.6 0.9	pF
Zero bias conductance $V_R = 0 V, f = 1 GHz$	g_P	-	220	-	μS
Forward resistance $I_F = 5 mA, f = 100 MHz$	r_f	-	1.5	1.8	Ω
Charge carrier life time $I_F = 10 mA, I_R = 6 mA$, measured at $I_R = 3 mA$, $R_L = 100 \Omega$	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

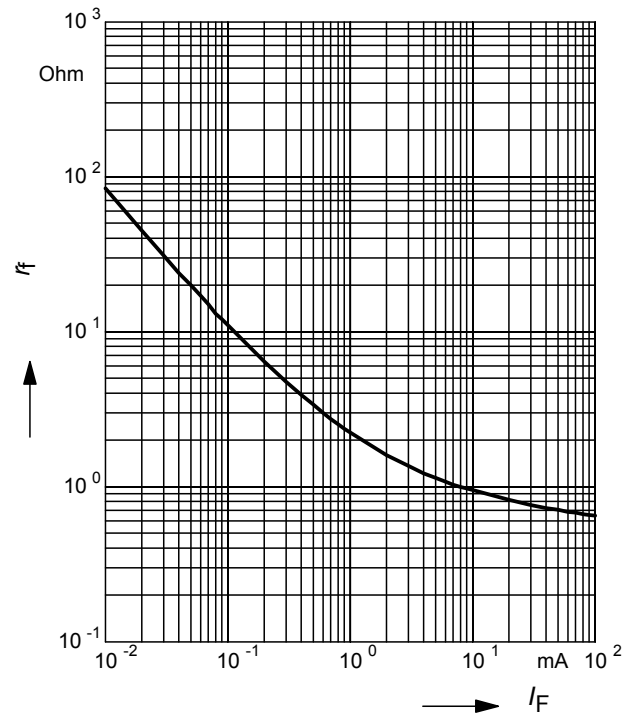
Diode capacitance $C_T = f(V_R)$

f = Parameter



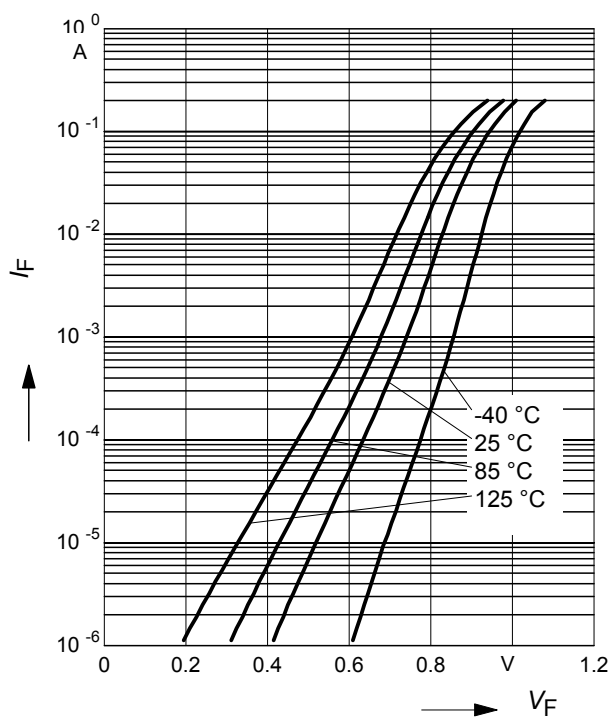
Forward resistance $r_f = f(I_F)$

$f = 100\text{MHz}$



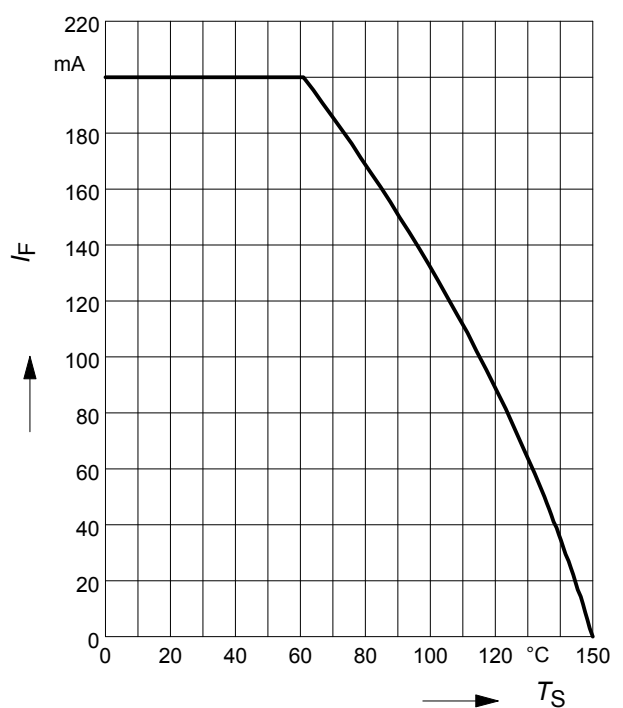
Forward current $I_F = f(V_F)$

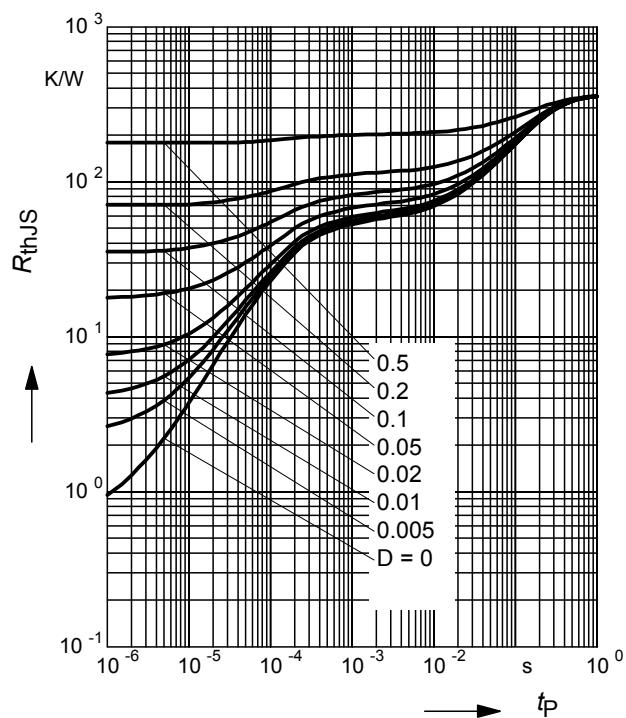
T_A = Parameter



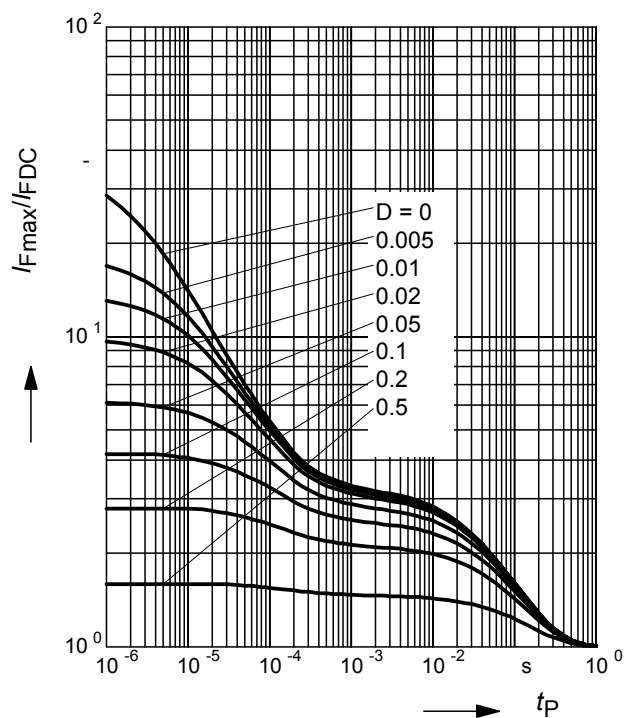
Forward current $I_F = f(T_S)$

BAR66

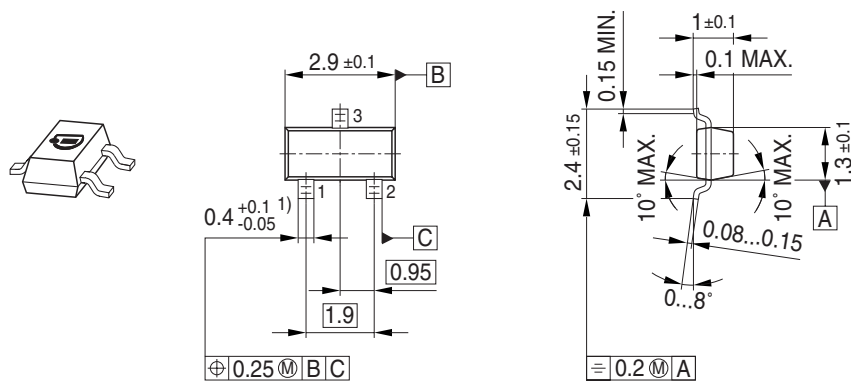


Permissible Puls Load $R_{thJS} = f(t_p)$
BAR66

Permissible Pulse Load

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

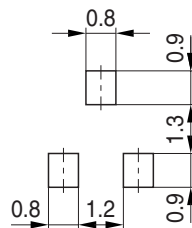
BAR66


Package Outline

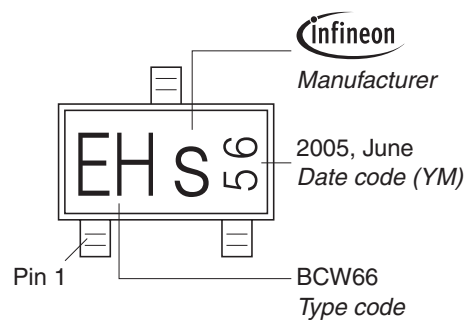


1) Lead width can be 0.6 max. in dambar area

Foot Print

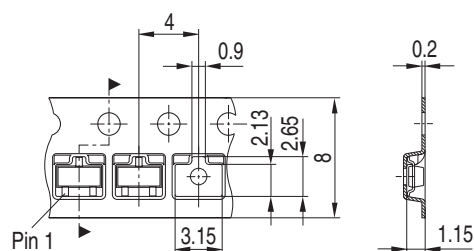


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



Edition 2009-11-16

**Published by
Infineon Technologies AG
81726 Munich, Germany**

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