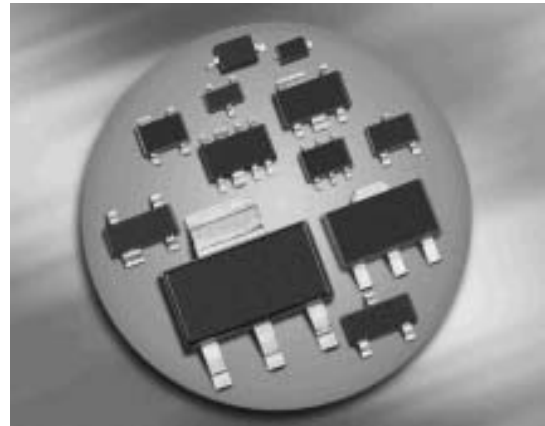
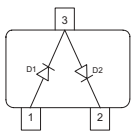


**Silicon PIN Diode Array**

- Surge protection device
- Designed for surge overvoltage clamping in antiparallel connection
- Pb-free (RoHS compliant) package<sup>1)</sup>
- 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 $T_S \leq 25^\circ\text{C}$	$P_{\text{tot}}$	250	mW
ESD contact discharge <sup>2)</sup>	$V_{\text{ESD}}$	25	kV
Peak pulse current ( $t_p = 8 / 20 \mu\text{s}$ ) <sup>3)</sup>	$I_{\text{pp}}$	12	A
Junction temperature	$T_j$	150	°C
Operating temperature range	$T_{\text{op}}$	-55 ... 125	
Storage temperature	$T_{\text{stg}}$	-55 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>4)</sup> , BAR 66	$R_{\text{thJS}}$	$\leq 290$	K/W

<sup>1)</sup>Pb-containing package may be available upon special request

<sup>2)</sup> $V_{\text{ESD}}$  according to IEC61000-4-2, only valid if pin 1 and pin 2 are connected

<sup>3)</sup> $I_{\text{pp}}$  according to IEC61000-4-5, only valid if pin 1 and pin 2 are connected

<sup>4)</sup>For calculation of  $R_{\text{thJA}}$  please refer to Application Note Thermal Resistance

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

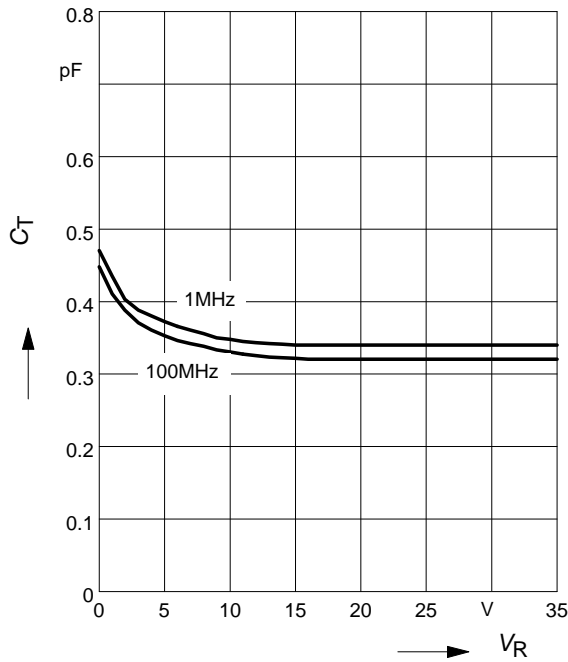
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Breakdown voltage $I_{(BR)} = 5 \mu\text{A}$	$V_{(BR)}$	150	-	-	V
Reverse current $V_R = 100 \text{ V}$	$I_R$	-	-	20	nA
Forward voltage $I_F = 50 \text{ mA}$	$V_F$	-	0.95	1.2	V
Clamping voltage $V_{ESD} = \pm 15 \text{ kV}$ (contact) <sup>1)</sup> $I_{PP} = 12 \text{ A}$ , $t_p = 8/20 \mu\text{s}$ <sup>2)</sup>	$V_{CL}$	- -	tbd 7	- -	
<b>AC Characteristics</b>					
Diode capacitance $V_R = 35 \text{ V}$ , $f = 1 \text{ MHz}$ $V_R = 0 \text{ V}$ , $f = 100 \text{ MHz}$	$C_T$	- -	0.4 0.35	0.6 0.9	pF
Zero bias conductance $V_R = 0 \text{ V}$ , $f = 1 \text{ GHz}$	$g_P$	-	220	-	$\mu\text{S}$
Forward resistance $I_F = 5 \text{ mA}$ , $f = 100 \text{ MHz}$	$r_f$	-	1.5	1.8	$\Omega$
Charge carrier life time $I_F = 10 \text{ mA}$ , $I_R = 6 \text{ mA}$ , measured at $I_R = 3 \text{ mA}$ , $R_L = 100 \Omega$	$\tau_{rr}$	-	0.7	-	$\mu\text{s}$

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

<sup>2)</sup>  $I_{pp}$  according to IEC61000-4-5, only valid if pin 1 and pin 2 are connected

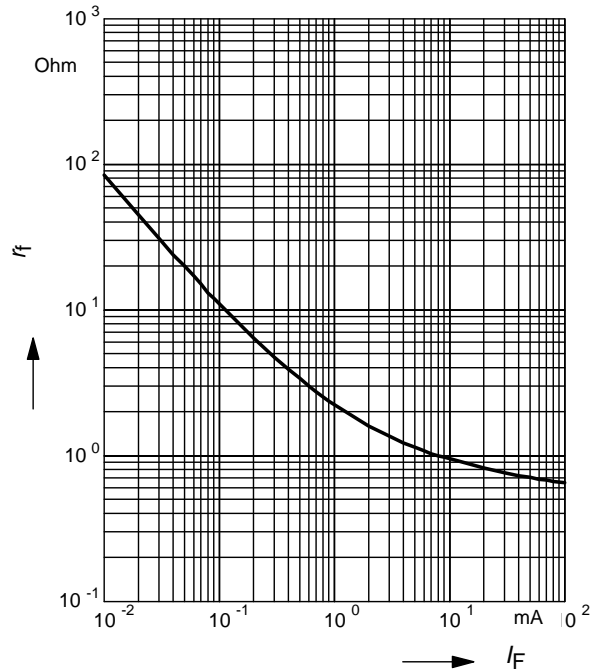
**Diode capacitance  $C_T = f(V_R)$**

$f =$  Parameter



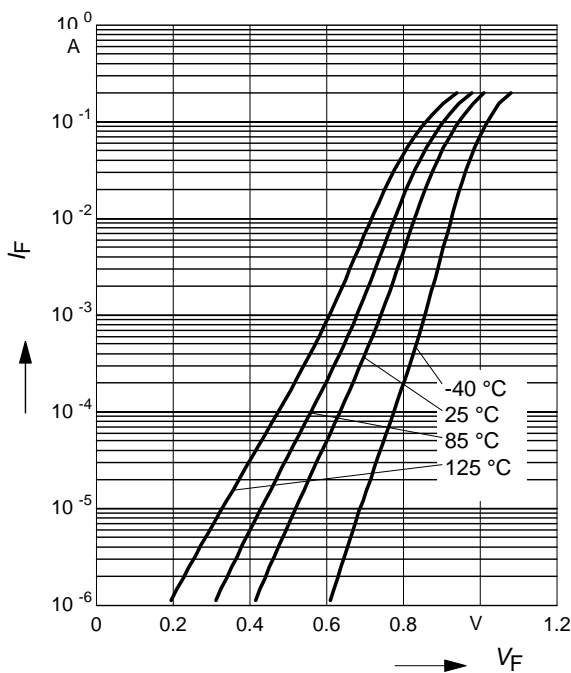
**Forward resistance  $r_f = f(I_F)$**

$f = 100\text{MHz}$



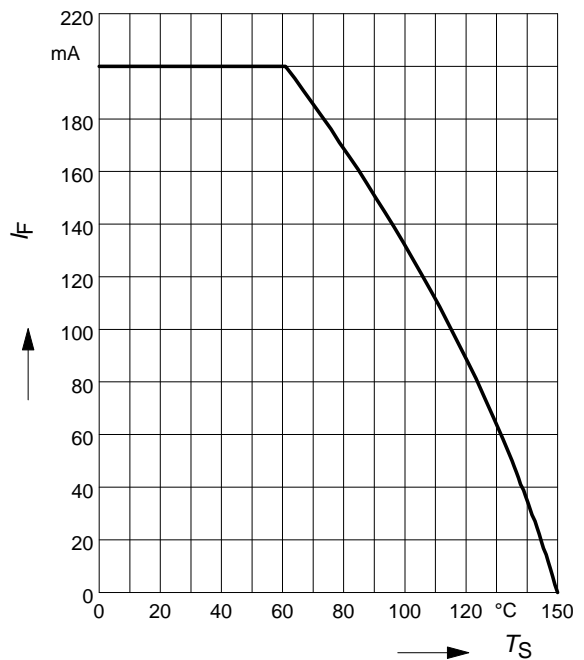
**Forward current  $I_F = f(V_F)$**

$T_A =$  Parameter



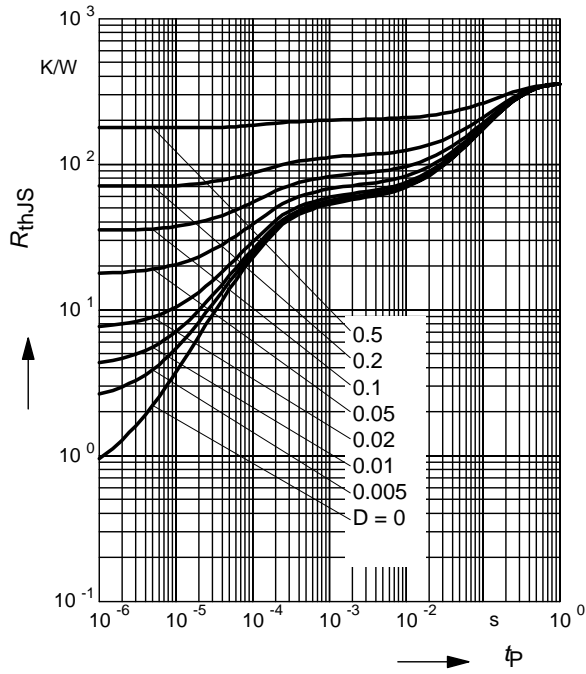
**Forward current  $I_F = f(T_S)$**

BAR66



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

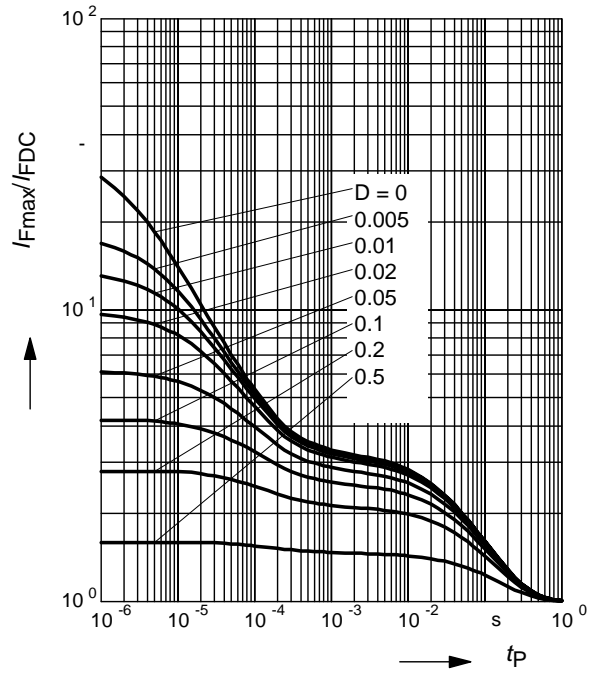
BAR66



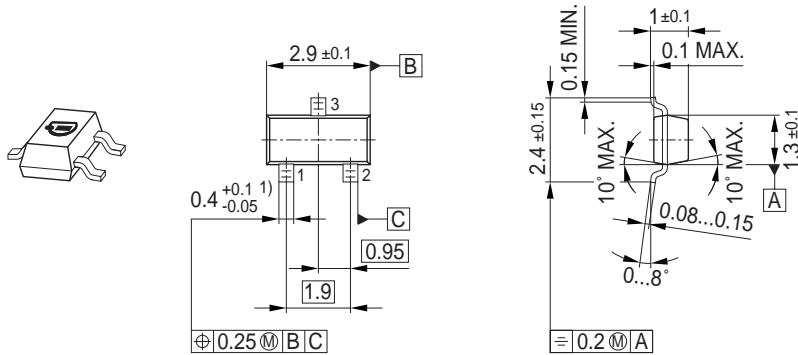
Permissible Pulse Load

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

BAR66

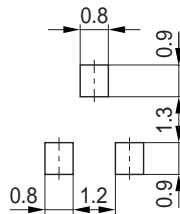


Package Outline

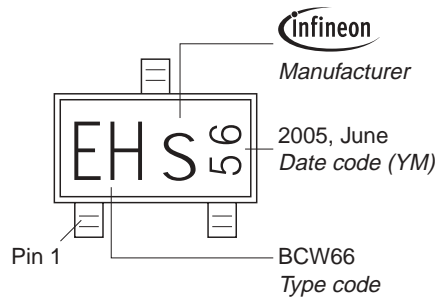


1) Lead width can be 0.6 max. in dambar area

Foot Print

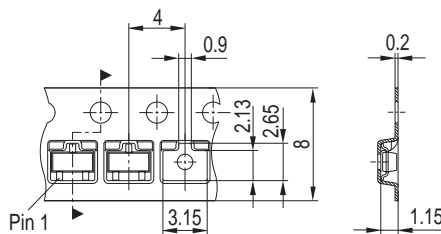


Marking Layout (Example)



Standard Packing

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



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