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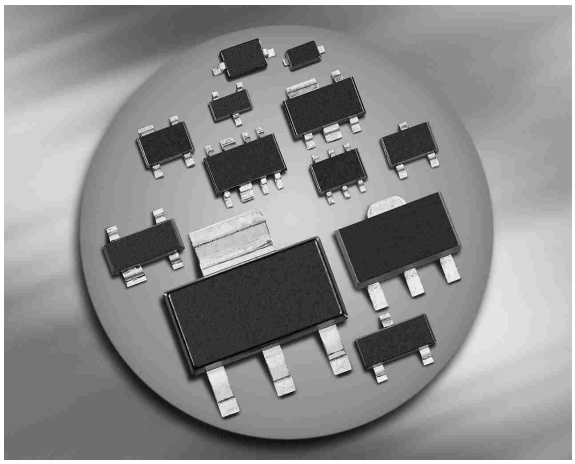
Silicon PIN Diode

- RF switch, RF attenuator for frequencies above 10 MHz
- Low distortion faktor
- Long-term stability of electrical characteristics
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101



BAR14-1 **BAR15-1** **BAR16-1** **BAR61**

Type	Package	Configuration	L_S(nH)	Marking
BAR14-1	SOT23	series	1.8	L7s
BAR15-1	SOT23	common cathode	1.8	L8s
BAR16-1	SOT23	common anode	1.8	L9s
BAR61	SOT143	PI element	2	61s

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	100	V
Forward current	I_F	140	mA
Total power dissipation $T_S \leq 65$°C	P_{tot}	250	mW
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[1)]	R_{thJS}	≤ 340	K/W

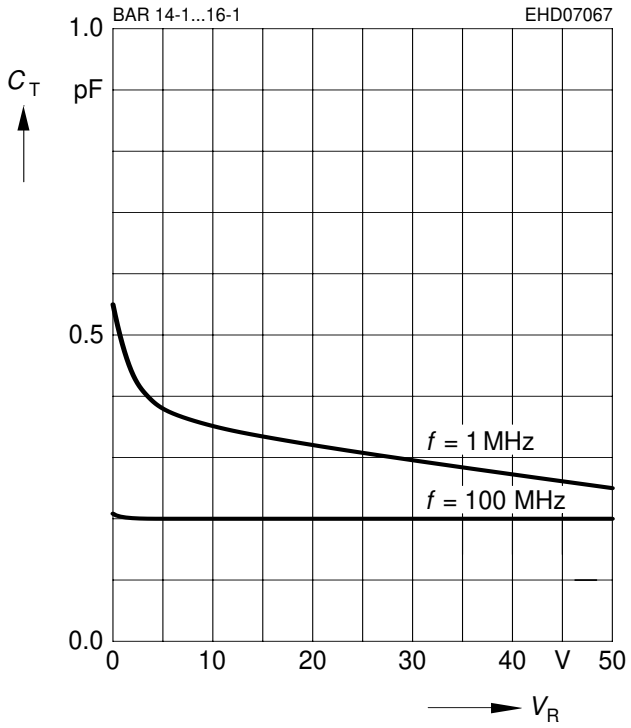
[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 50 V		-	-	100	
V_R = 100 V		-	-	1000	
Forward voltage	V_F	-	1.05	1.25	V
I_F = 100 mA					
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 0 V, f = 100 MHz		-	0.2	0.5	
V_R = 50 V, f = 1 MHz		-	0.25	0.5	
Zero bias conductance	g_P	-	50	100	µS
V_R = 0 V, f = 100 MHz					
Forward resistance	r_f				Ω
I_F = 0.01 mA, f = 100 MHz		-	2600	4200	
I_F = 0.1 mA, f = 100 MHz		300	470	-	
I_F = 1 mA, f = 100 MHz		35	55	85	
I_F = 10 mA, f = 100 MHz		5.5	8	12	
Charge carrier life time	τ_{rr}	700	1000	-	ns
I_F = 10 mA, I_R = 6 mA, measured at I_R = 3 mA, R_L = 100 Ω					
I-region width	W_I	-	146	-	µm

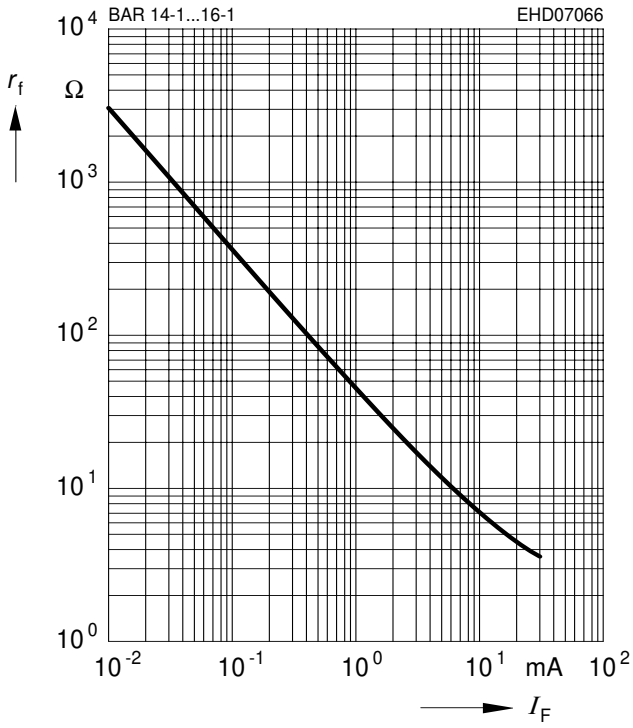
Diode capacitance $C_T = f(V_R)$

f = Parameter



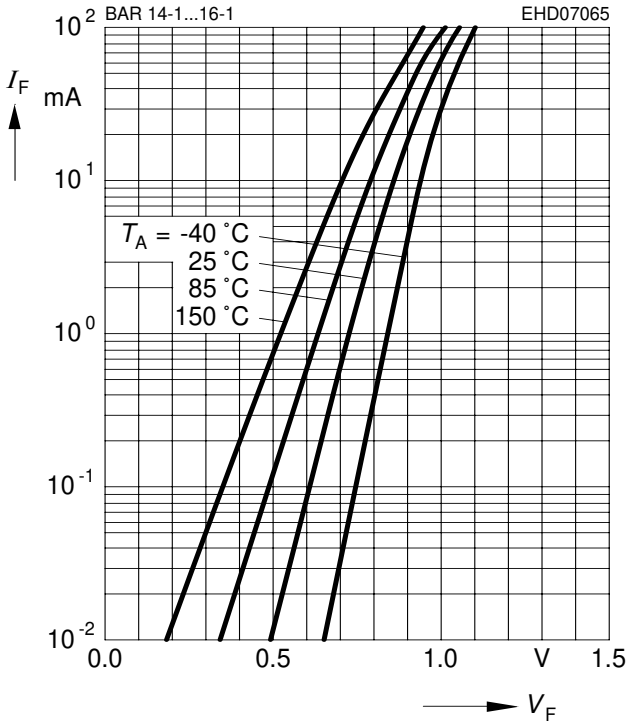
Forward resistance $r_f = f(I_F)$

f = 100MHz



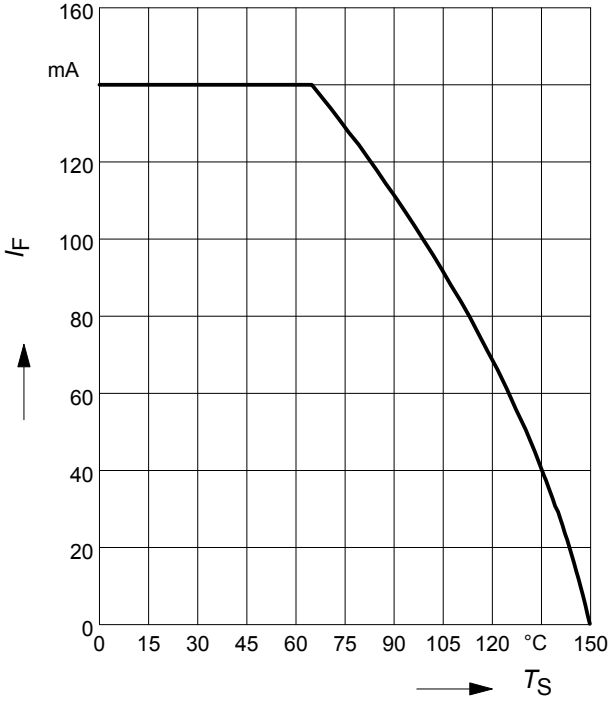
Forward current $I_F = f(V_F)$

T_A = 25°C

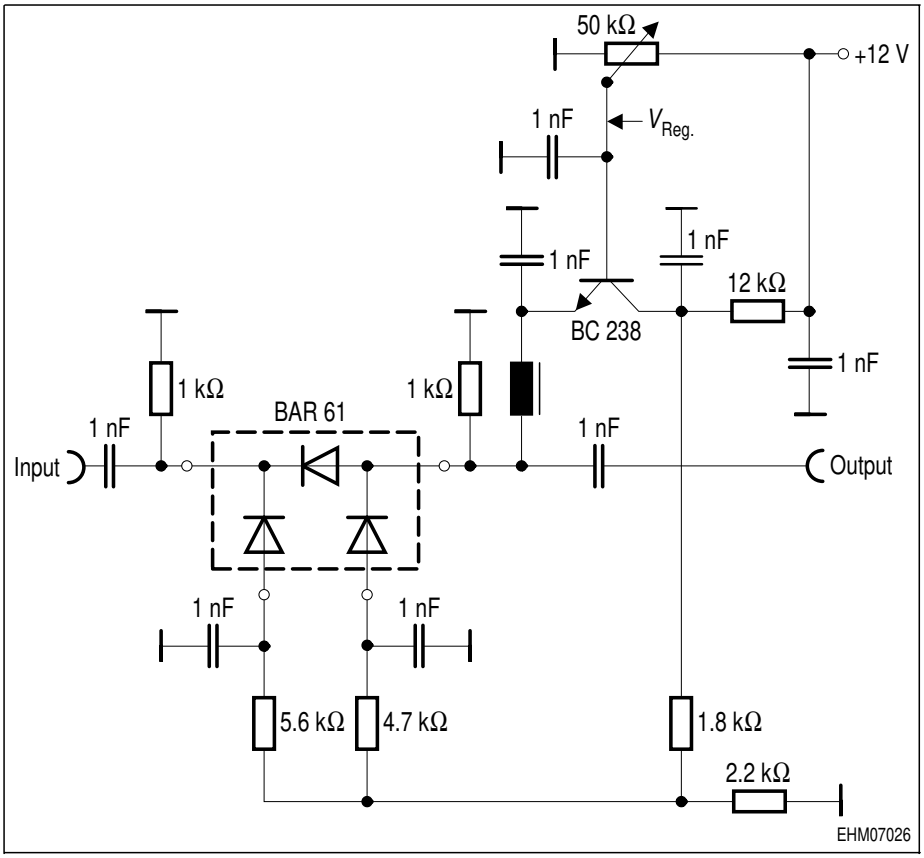


Forward current $I_F = f(T_S)$

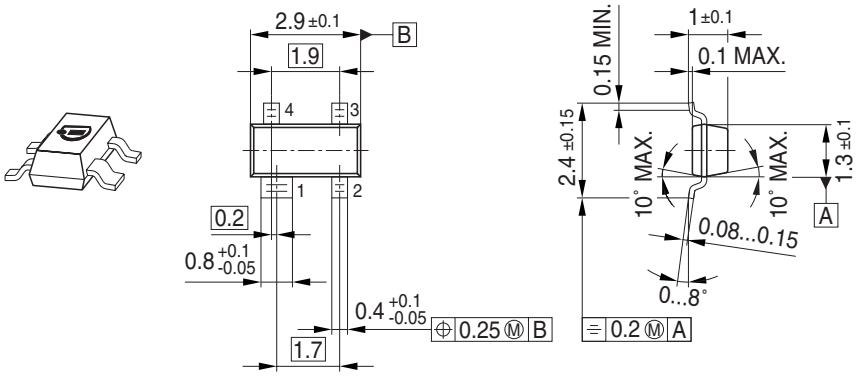
BAR14-1, BAR15-1, BAR16-1



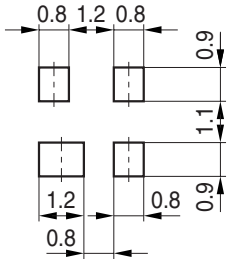
Application circuit for attenuation networks with diode BAR61



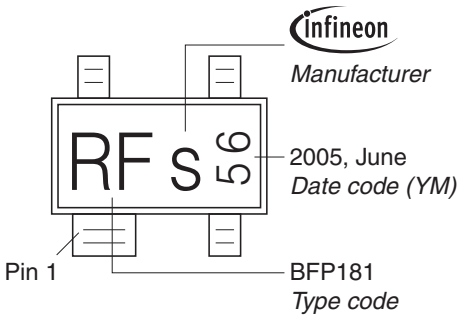
Package Outline



Foot Print

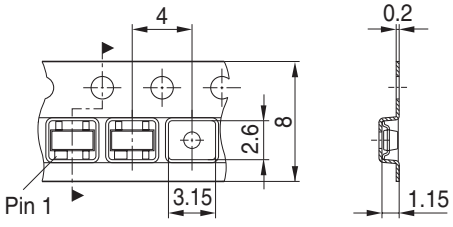


Marking Layout (Example)

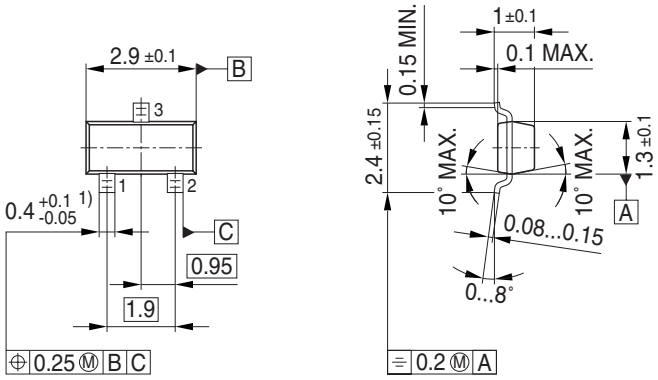


Standard Packing

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

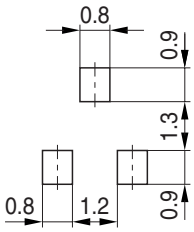


Package Outline

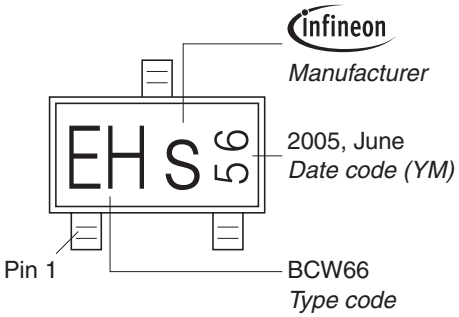


1) Lead width can be 0.6 max. in dambar area

Foot Print



Marking Layout (Example)



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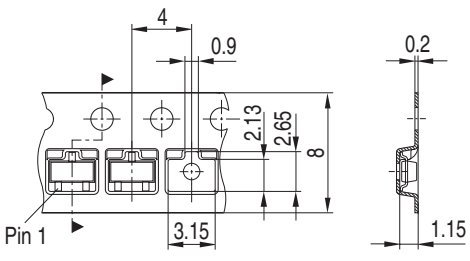
Reel ø330 mm = 10.000 Pieces/Reel



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