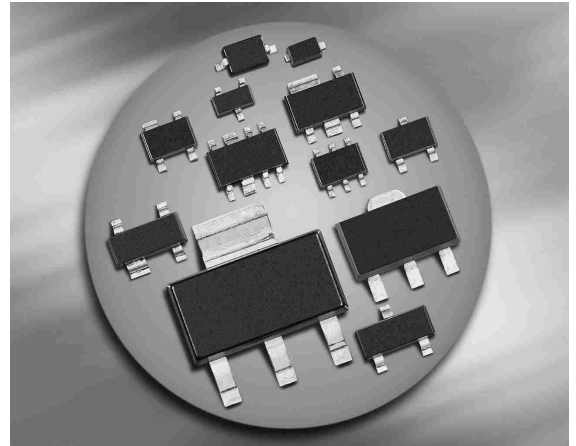
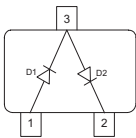
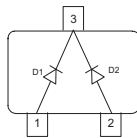
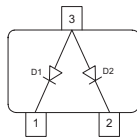
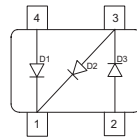


**Silicon PIN Diode**

- RF switch, RF attenuator for frequencies above 10 MHz
- Low distortion faktor
- Long-term stability of electrical characteristics


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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	100	V
Forward current	$I_F$	140	mA
Total power dissipation $T_S \leq 65^\circ\text{C}$	$P_{\text{tot}}$	250	mW
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>1)</sup>	$R_{\text{thJS}}$	$\leq 340$	K/W

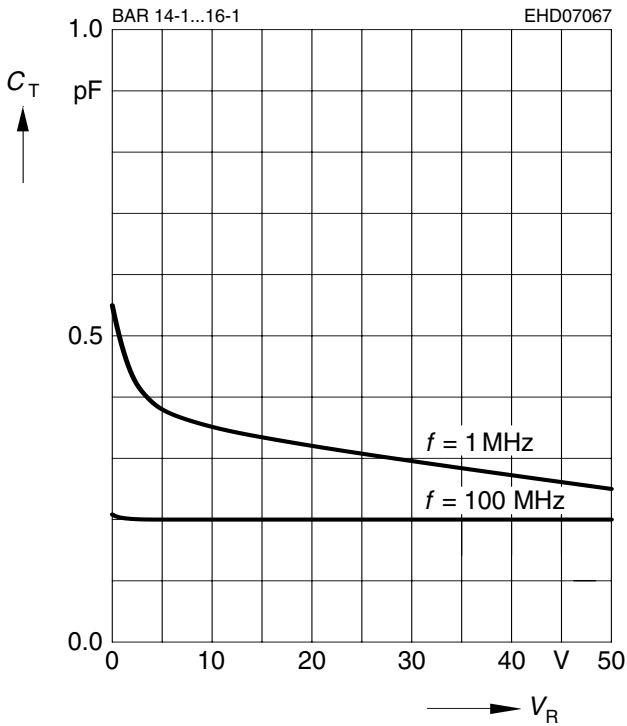
<sup>1)</sup>For calculation of  $R_{\text{thJA}}$  please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current $V_R = 50\text{ V}$ $V_R = 100\text{ V}$	$I_R$	- -	- -	100 1000	nA
Forward voltage $I_F = 100\text{ mA}$	$V_F$	-	1.05	1.25	V
<b>AC Characteristics</b>					
Diode capacitance $V_R = 0\text{ V}, f = 100\text{ MHz}$ $V_R = 50\text{ V}, f = 1\text{ MHz}$	$C_T$	- -	0.2 0.25	- 0.5	pF
Zero bias conductance $V_R = 0\text{ V}, f = 100\text{ MHz}$	$g_P$	-	50	-	$\mu\text{S}$
Forward resistance $I_F = 0.01\text{ mA}, f = 100\text{ MHz}$ $I_F = 0.1\text{ mA}, f = 100\text{ MHz}$ $I_F = 1\text{ mA}, f = 100\text{ MHz}$ $I_F = 10\text{ mA}, f = 100\text{ MHz}$	$r_f$	- - - -	2800 380 45 7	- - - -	$\Omega$
Charge carrier life time $I_F = 10\text{ mA}, I_R = 6\text{ mA}$ , measured at $I_R = 3\text{ mA}$ , $R_L = 100\ \Omega$	$\tau_{rr}$	700	1000	-	ns
I-region width	$W_I$	-	146	-	$\mu\text{m}$

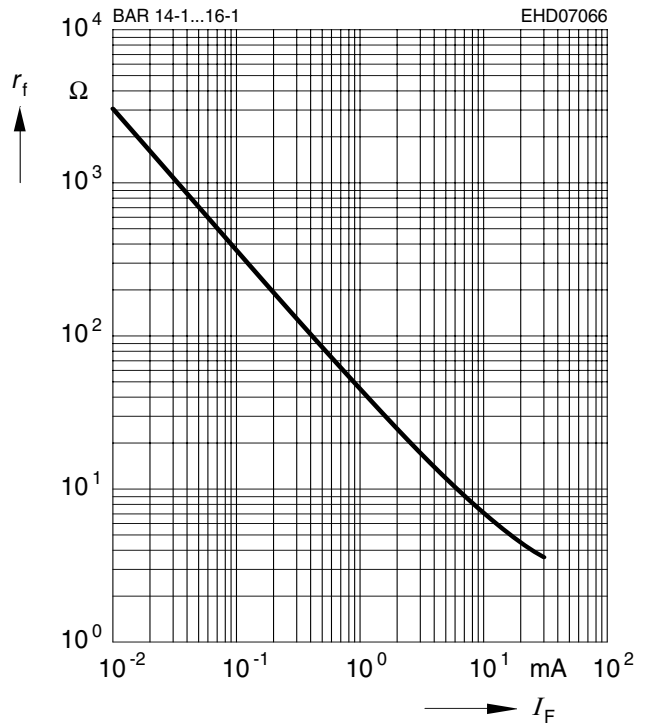
**Diode capacitance  $C_T = f(V_R)$**

$f =$  Parameter



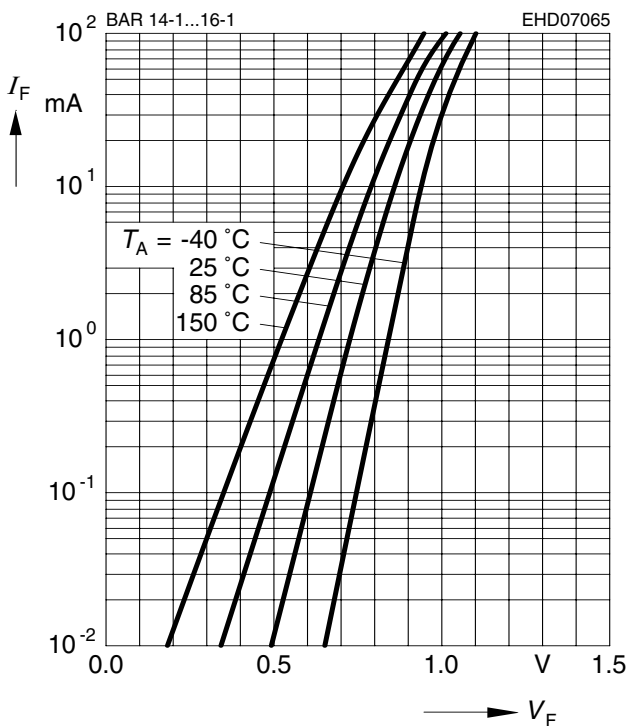
**Forward resistance  $r_f = f(I_F)$**

$f = 100 \text{ MHz}$



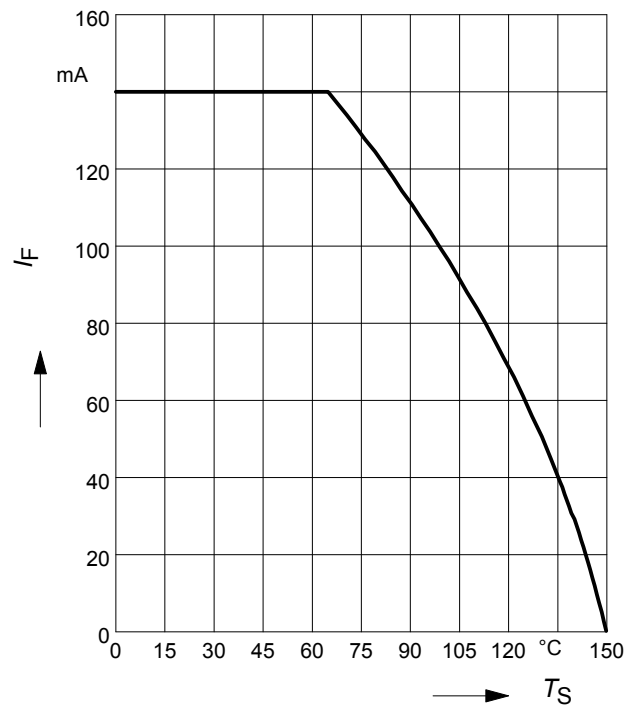
**Forward current  $I_F = f(V_F)$**

$T_A = 25^\circ\text{C}$

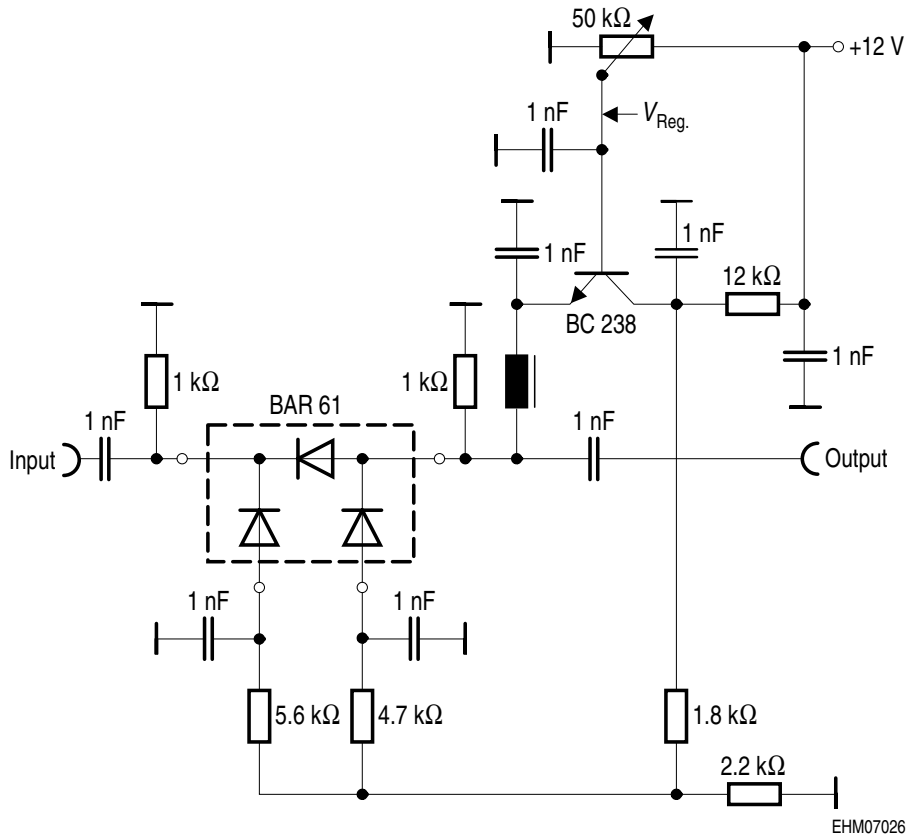


**Forward current  $I_F = f(T_S)$**

BAR14-1, BAR15-1, BAR16-1



Application circuit for attenuation networks with diode BAR61





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