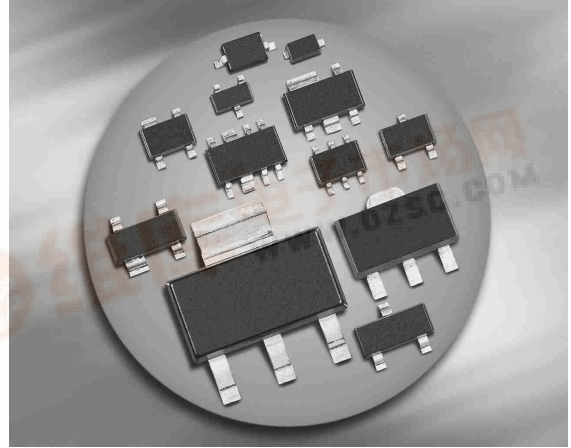




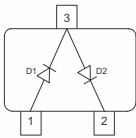
BAR14-1 / BAR15-1 / BAR16-1 / BAR61...

Silicon PIN Diode

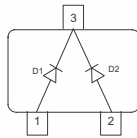
- RF switch, RF attenuator for frequencies above 10 MHz
- Low distortion factor
- Long-term stability of electrical characteristics



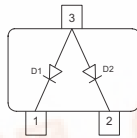
BAR14-1



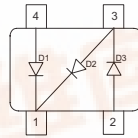
BAR15-1



BAR16-1



BAR61



Type	Package	Configuration	L <sub>S</sub> (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<sub>A</sub> = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V <sub>R</sub>	100	V
Forward current	I <sub>F</sub>	140	mA
Total power dissipation T <sub>S</sub> ≤ 65°C	P <sub>tot</sub>	250	mW
Junction temperature	T <sub>j</sub>	150	°C
Operating temperature range	T <sub>op</sub>	-55 ... 125	
Storage temperature	T <sub>stg</sub>	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	R <sub>thJS</sub>	≤ 340	K/W

<sup>1)</sup>For calculation of R<sub>thJA</sub> please refer to Application Note Thermal Resistance

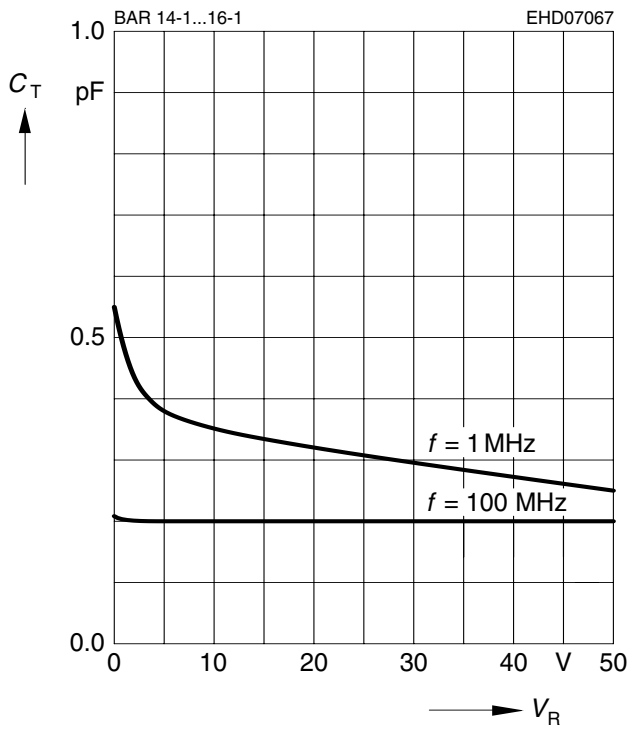


**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

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	-	$\mu\text{m}$

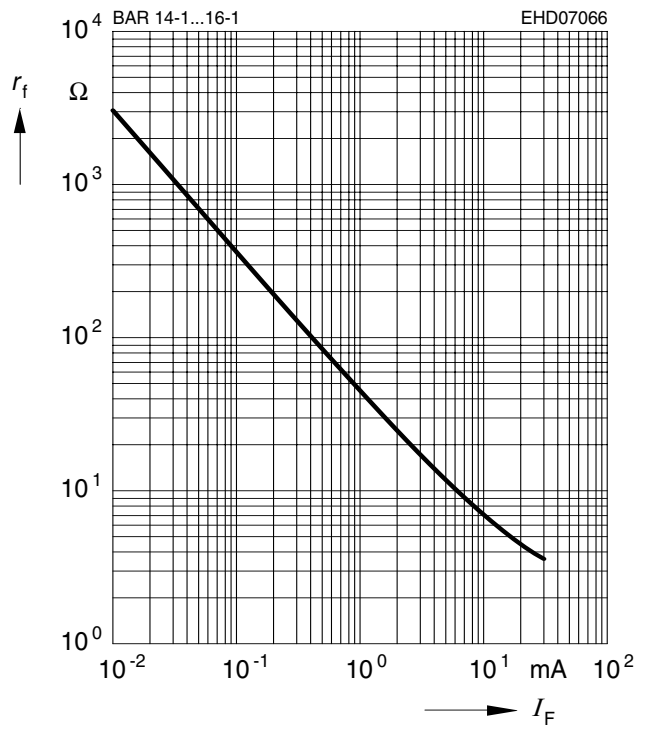
**Diode capacitance  $C_T = f(V_R)$**

$f =$  Parameter



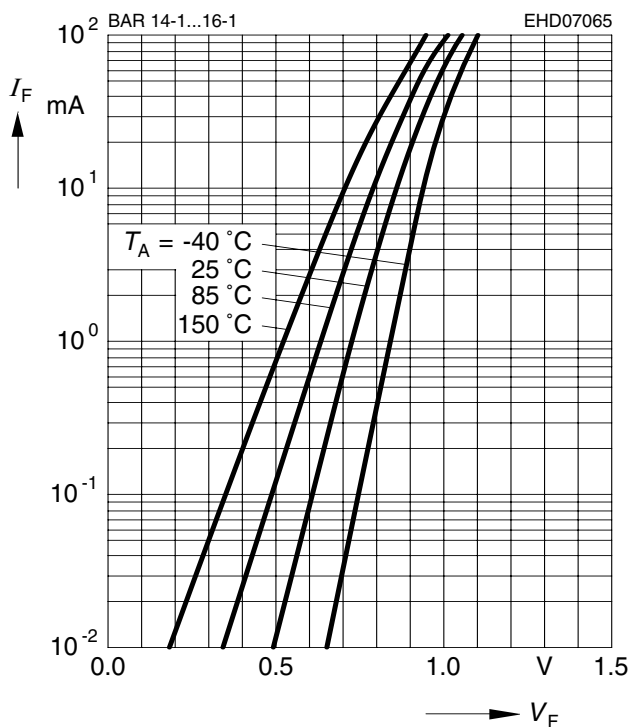
**Forward resistance  $r_f = f(I_F)$**

$f = 100\text{MHz}$



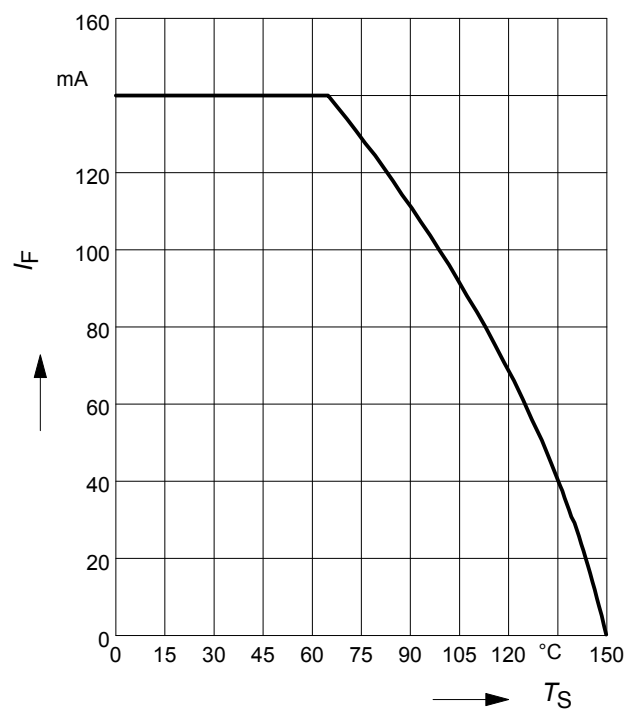
**Forward current  $I_F = f(V_F)$**

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



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

BAR14-1, BAR15-1, BAR16-1



Application circuit for attenuation networks with diode BAR61

