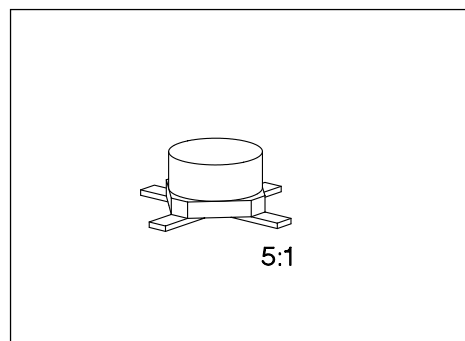


PNP Silicon RF Transistor

BFQ 76

- For broadband amplifiers up to 2 GHz at collector currents up to 20 mA.
- Complementary type: BFQ 71 (NPN).



ESD: Electrostatic discharge sensitive device, observe handling precautions!

Type	Marking	Ordering Code (tape and reel)	Pin Configuration				Package ¹⁾
			1	2	3	4	
BFQ 76	76	Q62702-F804	B	E	C	E	Cerrec-X

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	15	V
Collector-base voltage	V_{CB0}	20	
Emitter-base voltage	V_{EB0}	2	
Collector current	I_C	30	mA
Total power dissipation, $T_S \leq 116\text{ °C}^{3)}$	P_{tot}	250	mW
Junction temperature	T_j	175	°C
Ambient temperature range	T_A	– 65 ... + 175	
Storage temperature range	T_{stg}	– 65 ... + 175	

Thermal Resistance

Junction - ambient ²⁾	$R_{th\ JA}$	≤ 315	K/W
Junction - soldering point ³⁾	$R_{th\ JS}$	≤ 235	

¹⁾ For detailed dimensions see chapter Package Outlines.

²⁾ Package mounted on alumina 15 mm × 16.7 mm × 0.7 mm.

³⁾ T_S is measured on the collector lead at the soldering point to the pcb.

Electrical Characteristicsat $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

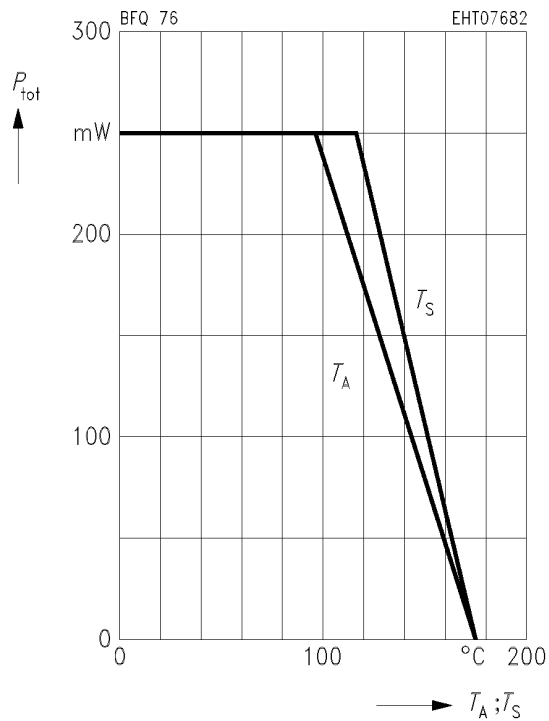
Collector-emitter breakdown voltage $I_C = 1\text{ mA}$, $I_B = 0$	$V_{(BR)CE0}$	15	—	—	V
Collector-base cutoff current $V_{CB} = 10\text{ V}$, $I_E = 0$	I_{CB0}	—	—	50	nA
Emitter-base cutoff current $V_{EB} = 2\text{ V}$, $I_C = 0$	I_{EB0}	—	—	10	μA
DC current gain $I_C = 14\text{ mA}$, $V_{CE} = 10\text{ V}$	h_{FE}	20	50	—	—

AC Characteristics

Transition frequency $I_C = 14\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 500\text{ MHz}$	f_T	—	5	—	GHz
Collector-base capacitance $V_{CB} = 10\text{ V}$, $V_{BE} = V_{be} = 0$, $f = 1\text{ MHz}$	C_{cb}	—	0.55	—	pF
Input capacitance $V_{EB} = 0.5\text{ V}$, $I_C = i_c = 0$, $f = 1\text{ MHz}$	C_{ibo}	—	1.2	—	
Output capacitance $V_{CE} = 10\text{ V}$, $V_{BE} = V_{be} = 0$, $f = 1\text{ MHz}$	C_{obs}	—	0.9	—	
Noise figure $I_C = 5\text{ mA}$, $V_{CE} = 6\text{ V}$, $f = 10\text{ MHz}$, $Z_S = 75\text{ }\Omega$ $I_C = 4\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 800\text{ MHz}$, $Z_S = Z_{Sopt}$	F	— —	1.8 2.5	— —	dB
Power gain $I_C = 14\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 800\text{ MHz}$, $Z_S = Z_{Sopt}$, $Z_L = Z_{Lopt}$	G_{pe}	—	17	—	

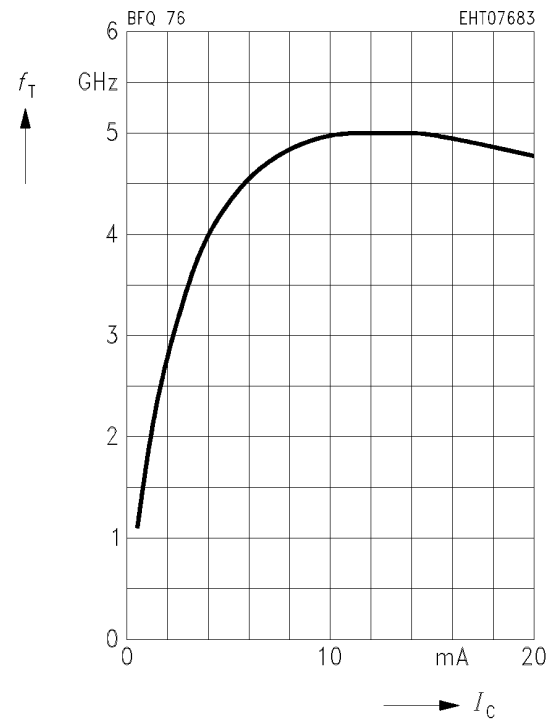
Total power dissipation $P_{\text{tot}} = f(T_A^*; T_S)$

*Package mounted on alumina



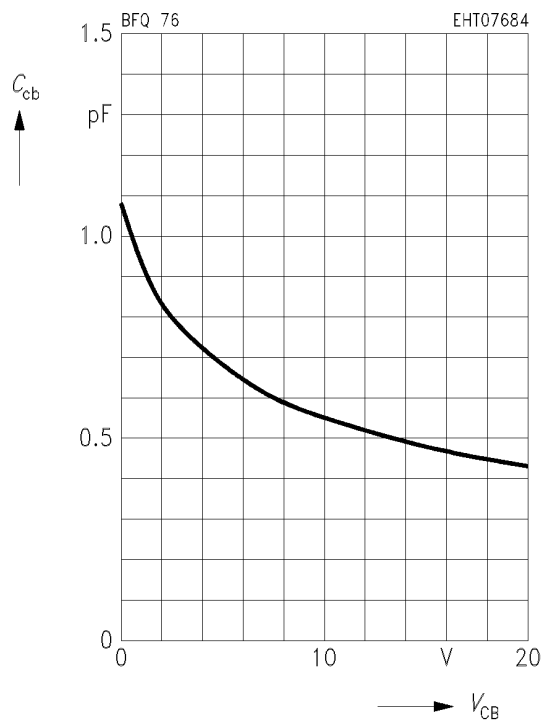
Transition frequency $f_T = f(I_C)$

$V_{\text{CE}} = 10 \text{ V}$, $f = 200 \text{ MHz}$



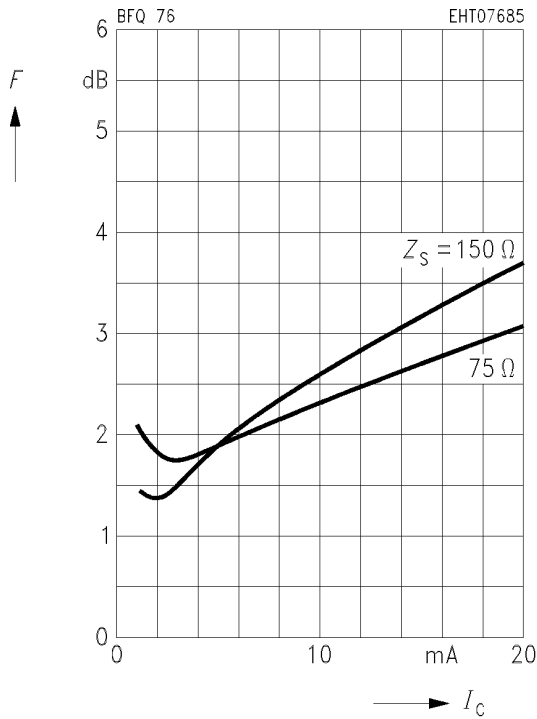
Collector-base capacitance $C_{\text{cb}} = f(V_{\text{CB}})$

$V_{\text{BE}} = v_{\text{be}} = 0$, $f = 1 \text{ MHz}$



Noise figure $F = f(I_C)$

$V_{CE} = 10\text{ V}$, $f = 10\text{ MHz}$



Noise figure $F = f(I_C)$

$V_{CE} = 10\text{ V}$, $f = 900\text{ MHz}$

