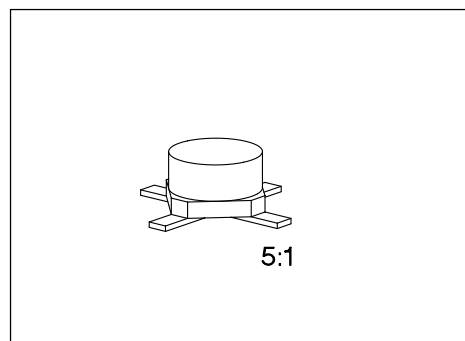


PNP Silicon RF Transistor

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	Cerec-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, $T_S \leq 116 \text{ }^\circ\text{C}^3$	P_{tot}	250	mW
Junction temperature	T_j	175	$^\circ\text{C}$
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 Characteristics

at $T_A = 25\text{ °C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

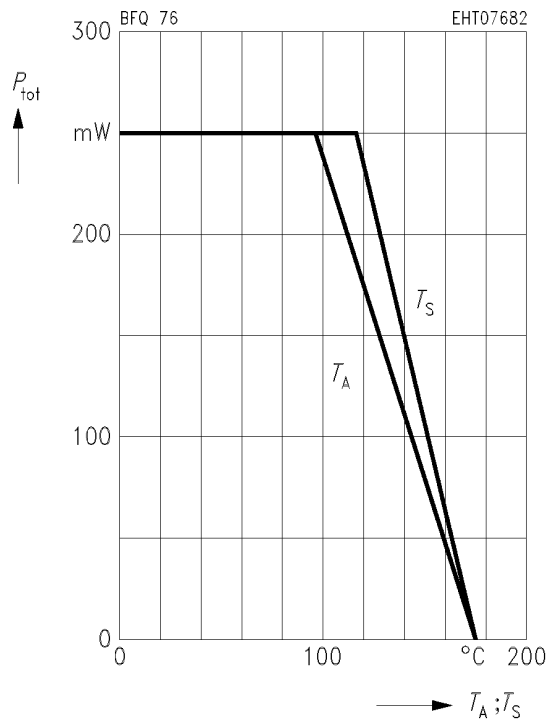
Collector-emitter breakdown voltage $I_C = 1\text{ mA}, I_B = 0$	$V_{(BR)CE0}$	15	–	–	V
Collector-base cutoff current $V_{CB} = 10\text{ V}, I_E = 0$	I_{CB0}	–	–	50	nA
Emitter-base cutoff current $V_{EB} = 2\text{ V}, I_C = 0$	I_{EB0}	–	–	10	μA
DC current gain $I_C = 14\text{ mA}, V_{CE} = 10\text{ V}$	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 $I_C = 5\text{ mA}, V_{CE} = 6\text{ V}, f = 10\text{ MHz}, Z_S = 75\ \Omega$ $I_C = 4\text{ mA}, V_{CE} = 10\text{ V}, f = 800\text{ MHz}, Z_S = Z_{Sopt}$	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	–	

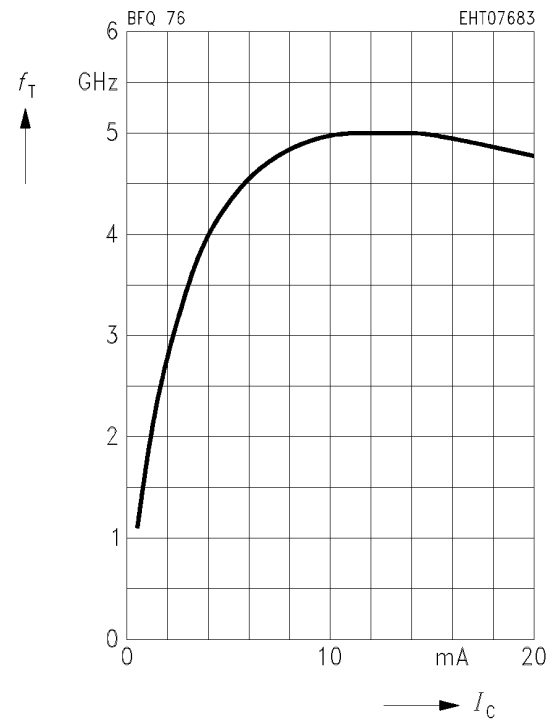
Total power dissipation $P_{tot} = f(T_A^*; T_S)$

*Package mounted on alumina



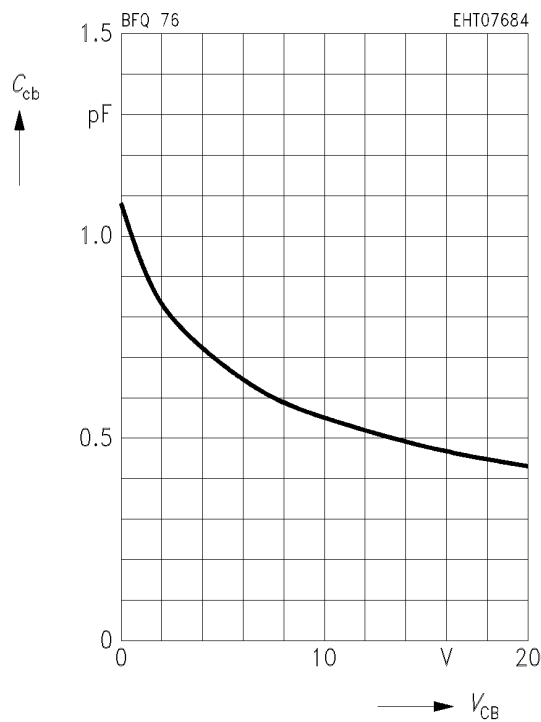
Transition frequency $f_T = f(I_C)$

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



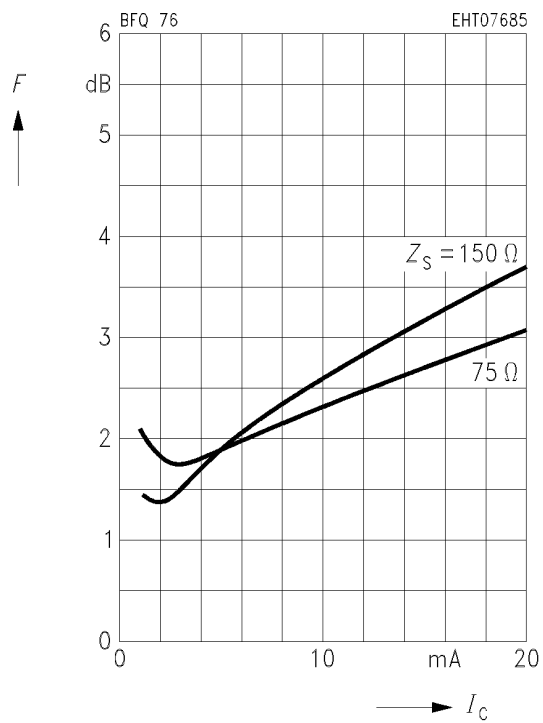
Collector-base capacitance $C_{cb} = f(V_{CB})$

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



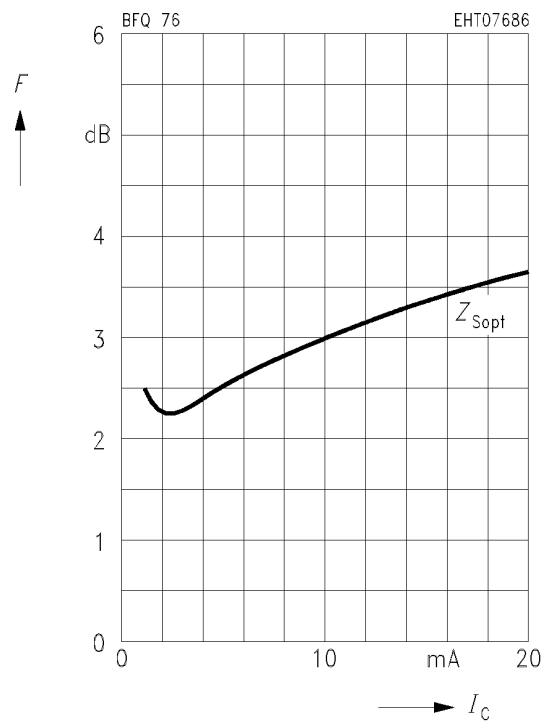
Noise figure $F = f(I_C)$

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



Noise figure $F = f(I_C)$

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





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