SIEMENS

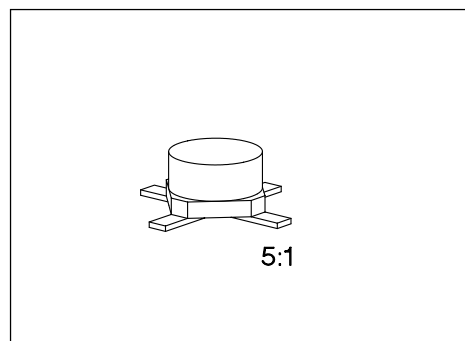## PNP Silicon RF Transistor   BFQ 76

● For broadband amplifiers up to 2 GHz
  at collector currents up to 20 mA.

● Complementary type: BFQ 71 (NPN).

5:1

ESD: **E**lectro**s**tatic **d**ischarge 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, $T_S \leq 116\ °C$[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	

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[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 $T_A = 25\ °C$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

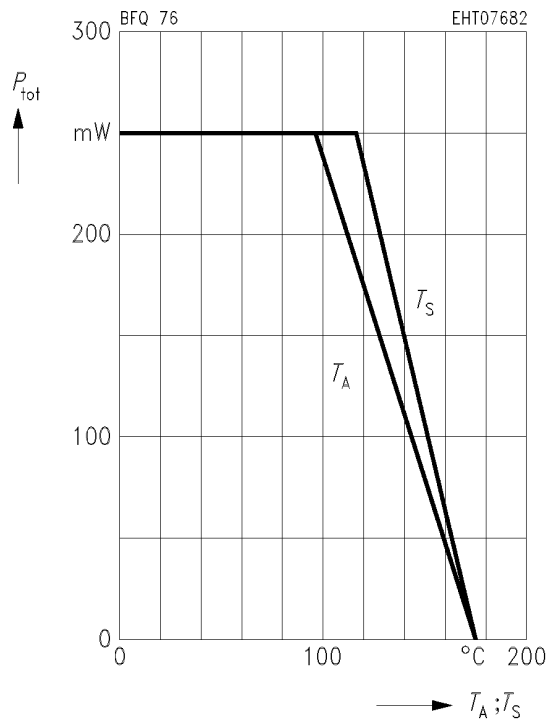| Parameter	Symbol	min.	typ.	max.	Unit
Collector-emitter breakdown voltage $I_C = 1$ mA, $I_B = 0$	$V_{(BR)CE0}$	15	–	–	V
Collector-base cutoff current $V_{CB} = 10$ V, $I_E = 0$	I_{CB0}	–	–	50	nA
Emitter-base cutoff current $V_{EB} = 2$ V, $I_C = 0$	I_{EB0}	–	–	10	μA
DC current gain $I_C = 14$ mA, $V_{CE} = 10$ V	h_{FE}	20	50	–	–

AC Characteristics

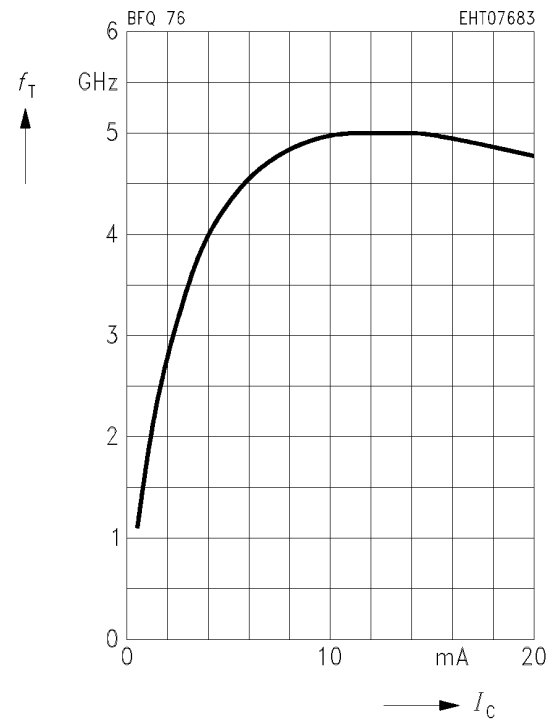| Parameter	Symbol	min.	typ.	max.	Unit
Transition frequency $I_C = 14$ mA, $V_{CE} = 10$ V, $f = 500$ MHz	f_t	–	5	–	GHz
Collector-base capacitance $V_{CB} = 10$ V, $V_{BE} = v_{be} = 0, f = 1$ MHz	C_{cb}	–	0.55	–	pF
Input capacitance $V_{EB} = 0.5$ V, $I_C = i_c = 0, f = 1$ MHz	C_{ibo}	–	1.2	–	
Output capacitance $V_{CE} = 10$ V, $V_{BE} = v_{be} = 0, f = 1$ MHz	C_{obs}	–	0.9	–	
Noise figure $I_C = 5$ mA, $V_{CE} = 6$ V, $f = 10$ MHz, $Z_S = 75\ \Omega$ $I_C = 4$ mA, $V_{CE} = 10$ V, $f = 800$ MHz, $Z_S = Z_{Sopt}$	F	– –	1.8 2.5	– –	dB
Power gain $I_C = 14$ mA, $V_{CE} = 10$ V, $f = 800$ 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

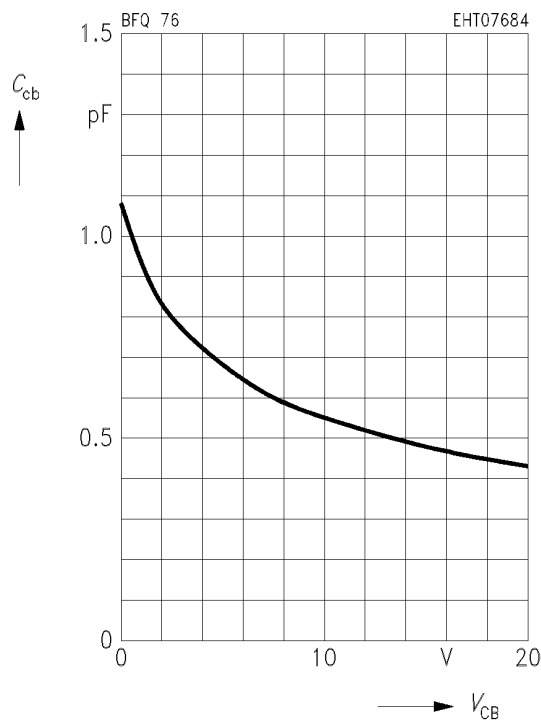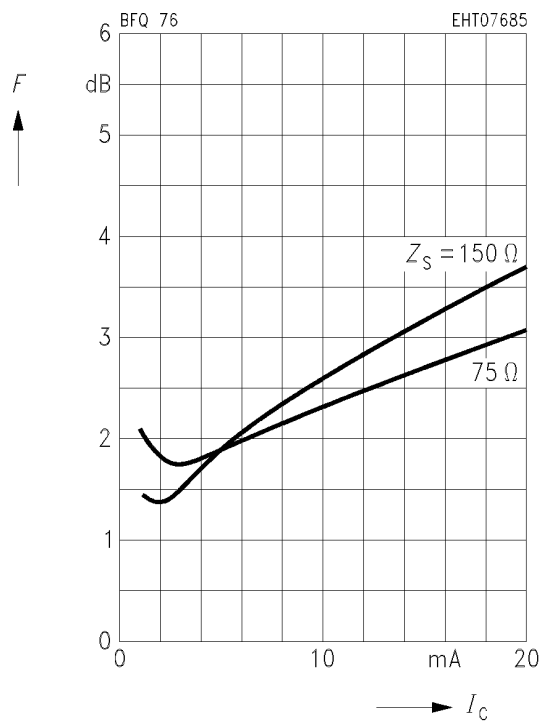**Transition frequency $f_T = f(I_C)$**
$V_{CE} = 10$ V, $f = 200$ MHz

Collector-base capacitance $C_{cb} = f(V_{CB})$
$V_{BE} = v_{be} = 0, f = 1$ MHz

Noise figure $F = f(I_C)$
$V_{CE} = 10$ V, $f = 10$ MHz

Noise figure $F = f(I_C)$
$V_{CE} = 10$ V, $f = 900$ MHz