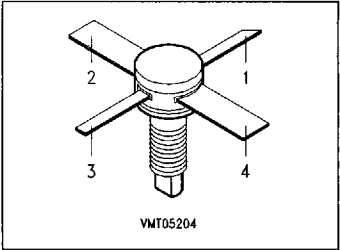


NPN Silicon RF Transistors

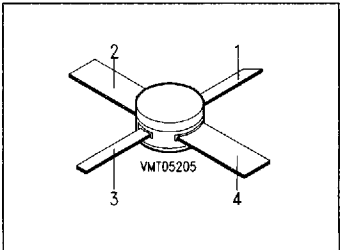
BFT 98
BFT 98B

- For low-distortion broadband amplifier output stages up to 1 GHz at collector currents up to 150 mA.
- With integrated emitter stabilizing resistors.



Type	Marking	Ordering Code	Pin Configuration				Package ¹⁾
			1	2	3	4	
BFT 98	BFT 98	Q62702-F523	C	E	B	E	TO-117

- For low-distortion broadband amplifier output stages up to 1 GHz at collector currents up to 150 mA.
- With integrated emitter stabilizing resistors.



Type	Marking	Ordering Code	Pin Configuration				Package ¹⁾
			1	2	3	4	
BFT 98B	BFT 98B	Q62702-F1084	C	E	B	E	TO-117

¹⁾ For detailed information see chapter Package Outlines.

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	20	V
Collector-emitter voltage, $V_{BE} = 0$	V_{CES}	30	
Emitter-base voltage	V_{EB0}	3	
Collector current	I_C	200	mA
Peak collector current, $t \leq 100 \mu s$	I_{CM}	250	
Base current	I_B	50	
Total power dissipation, $T_C \leq 70 \text{ }^\circ\text{C}^1)$	P_{tot}	2.25	W
Junction temperature	T_j	150	$^\circ\text{C}$
Ambient temperature range	T_A	$-65 \dots +150$	
Storage temperature range	T_{stg}	$-65 \dots +150$	

Thermal Resistance

Junction - ambient	$R_{th JA}$	≤ 85	K/W
Junction - case (bottom plate)	$R_{th JC}$	≤ 35	

¹⁾ Package mounted on alumina $15 \text{ mm} \times 16.7 \text{ mm} \times 0.7 \text{ mm}$.

Electrical Characteristics

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

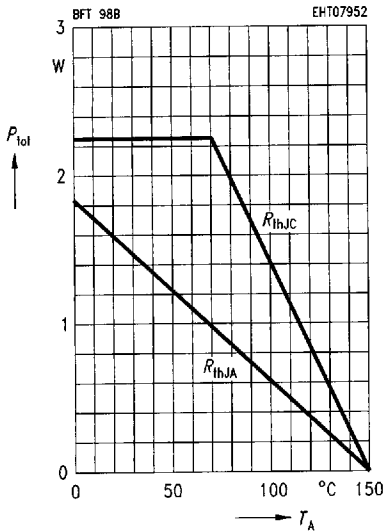
DC Characteristics

Collector-emitter cutoff current $V_{CE} = 30\text{ V}, V_{BE} = 0$	I_{CES}	—	—	1	mA
Collector-base cutoff current $V_{CB} = 15\text{ V}, I_E = 0$	I_{CBO}	—	—	200	nA
DC current gain $I_C = 120\text{ mA}, V_{CE} = 5\text{ V}$	h_{FE}	25	—	—	—

AC Characteristics

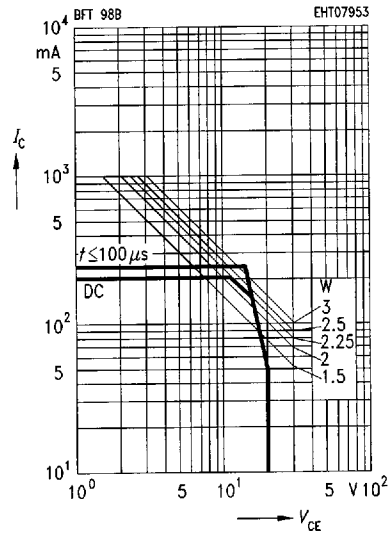
Transition frequency $I_C = 120\text{ mA}, V_{CE} = 5\text{ V}, f = 200\text{ MHz}$	f_T	—	3.3	—	GHz
Collector-base capacitance $V_{CB} = 15\text{ V}, V_{BE} = V_{be} = 0, f = 1\text{ MHz}$	C_{cb}	—	0.75	1	pF
Power gain $I_C = 120\text{ mA}, V_{CE} = 15\text{ V}, f = 800\text{ MHz},$ $Z_S = Z_{Sopt}, Z_L = Z_{Lopt}$	G_{pe}	—	15	—	dB
Linear output voltage two-tone intermodulation test $I_C = 120\text{ mA}, V_{CE} = 15\text{ V}, d_{IM} = 60\text{ dB},$ $f_1 = 806\text{ MHz}, f_2 = 810\text{ MHz}, Z_S = Z_L = 50\ \Omega$	$V_{o1} = V_{o2}$	—	800	—	mV
Third order intercept point $I_C = 120\text{ mA}, V_{CE} = 15\text{ V}, f = 800\text{ MHz}$	IP_3	—	41	—	dBm

Total power dissipation $P_{tot} = f(T_A)$



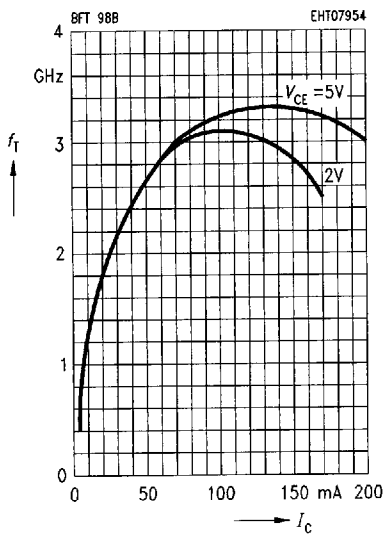
Operating range $I_C = f(V_{CE})$

$T_C = 70^\circ\text{C}$, $R_{thJC} = 35\text{ K/W}$



Transition frequency $f_T = f(I_C)$

$f = 200\text{ MHz}$



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

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

