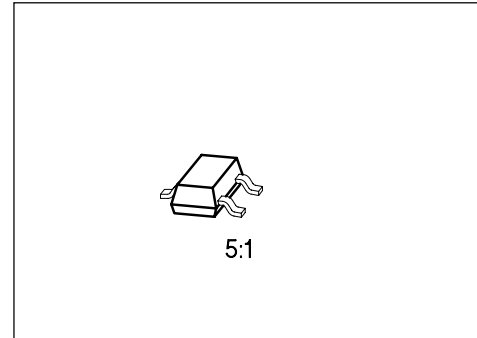


NPN Silicon RF Transistor

BF 554

- For general small-signal RF applications up to 300 MHz in amplifier, mixer and oscillator circuits



Type	Marking	Ordering Code (tape and reel)	Pin Configuration			Package ¹⁾
			1	2	3	
BF 554	CC	Q62702-F1042	B	E	C	SOT-23

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	20	V
Collector-base voltage	V_{CB0}	30	
Emitter-base voltage	V_{EB0}	5	
Collector current	I_C	30	mA
Total power dissipation, $T_A \leq 25\text{ °C}$	P_{tot}	280	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	- 65 ... + 150	

Thermal Resistance

Junction - ambient ²⁾	$R_{th\ JA}$	≤ 450	K/W
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¹⁾ For detailed information see chapter Package Outlines.

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

Electrical Characteristics

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

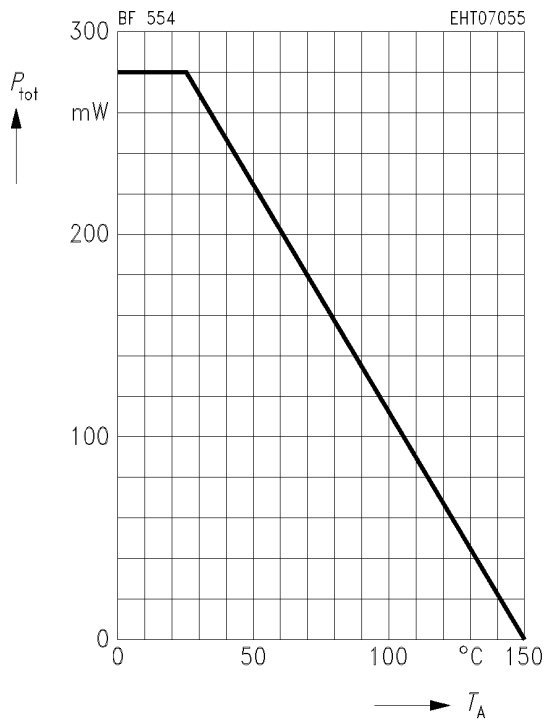
DC Characteristics

Collector-emitter breakdown voltage $I_C = 1\text{ mA}, I_B = 0$	$V_{(BR)CE0}$	20	–	–	V
Collector cutoff current $V_{CB} = 20\text{ V}, I_E = 0$	I_{CB0}	–	–	100	nA
DC current gain $I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$	h_{FE}	60	–	250	–
Base-emitter voltage $I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$	V_{BE}	–	0.7	–	V

AC Characteristics

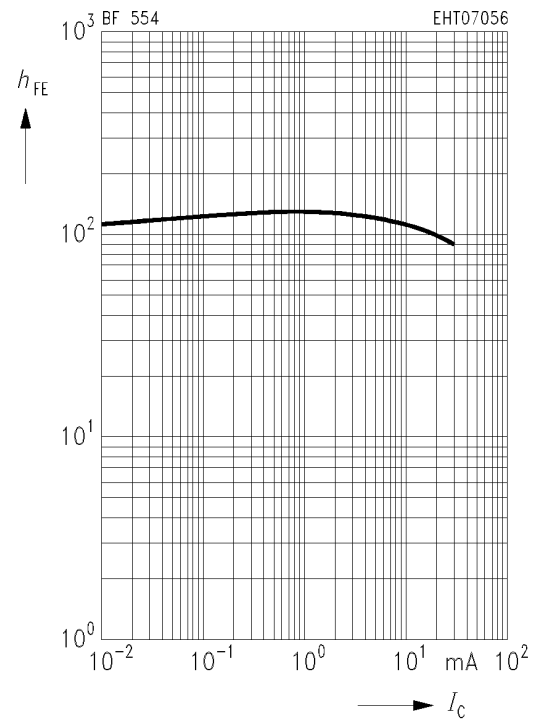
Transition frequency $I_C = 1\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$	f_T	–	250	–	MHz
Collector-base capacitance $V_{CE} = 10\text{ V}, V_{BE} = 0\text{ V}, f = 1\text{ MHz}$	C_{cb}	–	0.6	–	pF
Noise figure $I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$ $f = 200\text{ kHz}, g_s = 2\text{ mS}$ $f = 1\text{ MHz}, g_s = 1.5\text{ mS}$ $f = 100\text{ MHz}, g_s = 10\text{ mS}$	F	–	1.5 1.2 3	–	dB
Output conductance $I_C = 1\text{ mA}, V_{CE} = 10\text{ V}, f = 0.5...10\text{ MHz}$	g_{22e}	–	4	–	μS

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



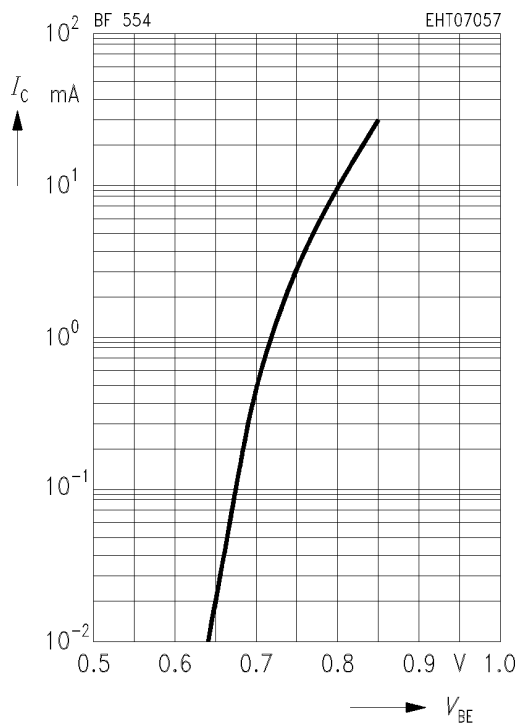
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 10\text{ V}$



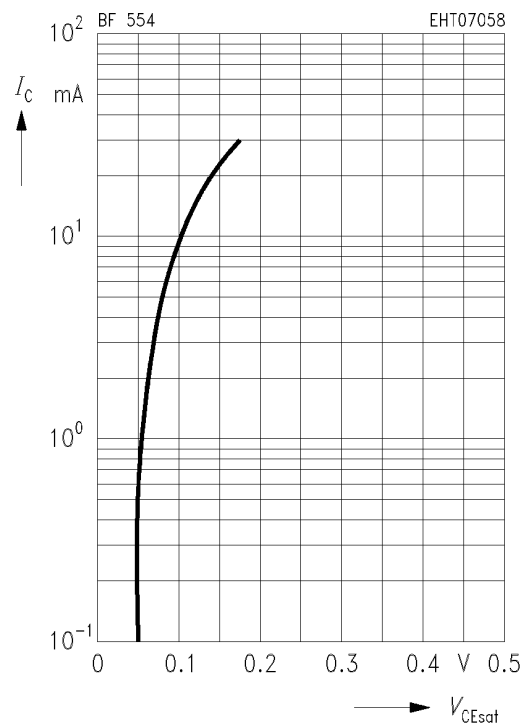
Collector current $I_C = f(V_{BE})$

$V_{CE} = 10\text{ V}$



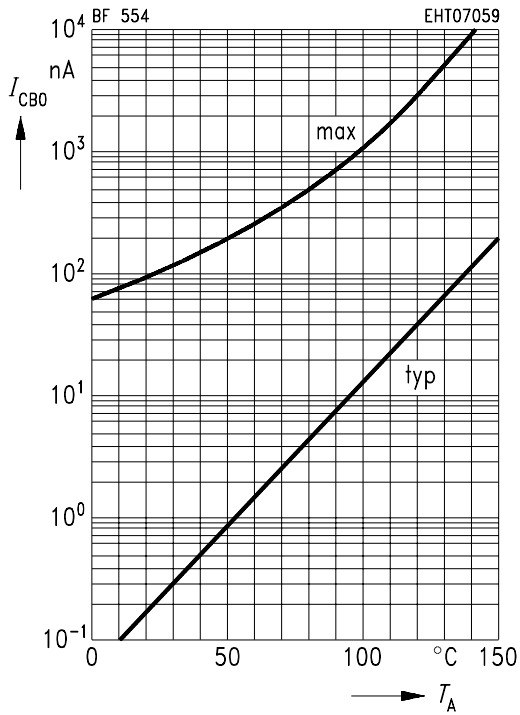
Collector-emitter saturation voltage $V_{CEsat} = f(I_C)$

$h_{FE} = 10$



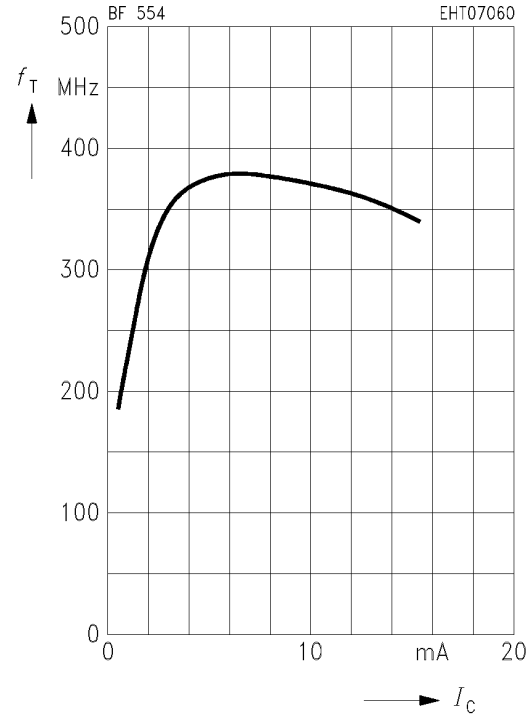
Collector cutoff current $I_{CB0} = f(T_A)$

$V_{CB} = 20\text{ V}$



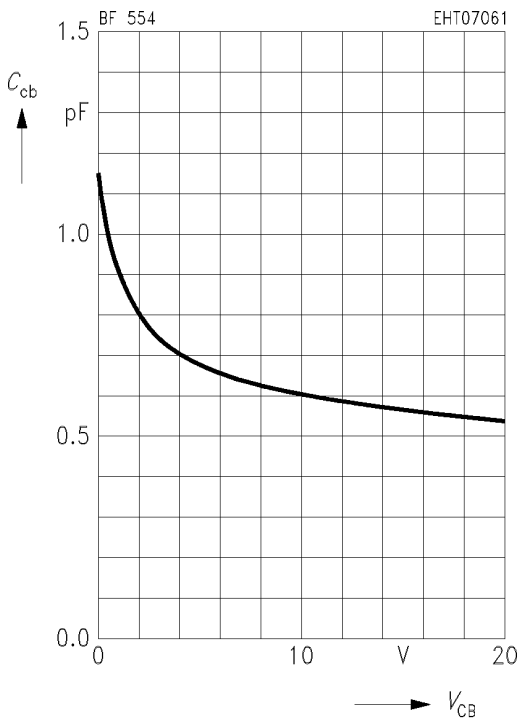
Transition frequency $f_T = f(I_C)$

$V_{CE} = 10\text{ V}, f = 100\text{ MHz}$



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

$f = 1\text{ MHz}$



Noise figure $F = f(f)$

$I_C = 1\text{ mA}, V_{CE} = 10\text{ V}, R_S = 60\ \Omega$

