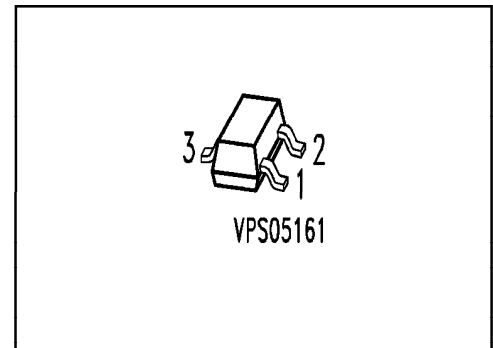


NPN Silicon RF Transistor

BF 777

Preliminary Data

- For UHF/VHF frequency converters and local oscillators.
- $f_T = 2.2$ GHz



ESD: Electrostatic discharge sensitive device, observe handling precautions!

Type	Marking	Ordering Code (tape and reel)	Pin Configuration			Package ¹⁾
			1	2	3	
BF 777	LFs	Q62702-F1426	B	E	C	SOT-23

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	20	V
Collector-emitter voltage, $V_{BE} = 0$	V_{CES}	25	
Collector-base voltage	V_{CB0}	30	
Emitter-base voltage	V_{EB0}	3	
Collector current	I_C	50	mA
Peak collector current, $f \geq 10$ MHz	I_{CM}	50	
Base current	I_B	8	
Peak base current, $f \geq 10$ MHz	I_{BM}	10	
Total power dissipation, $T_s \leq 97$ °C ³⁾	P_{tot}	150	mW
Junction temperature	T_j	150	°C
Ambient temperature range	T_A	- 65 ... + 150	
Storage temperature range	T_{stg}	- 65 ... + 150	

Thermal Resistance

Junction - ambient ²⁾	$R_{th JA}$	≤ 430	K/W
Junction - soldering point ³⁾	$R_{th JS}$	≤ 350	

1) For detailed information 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

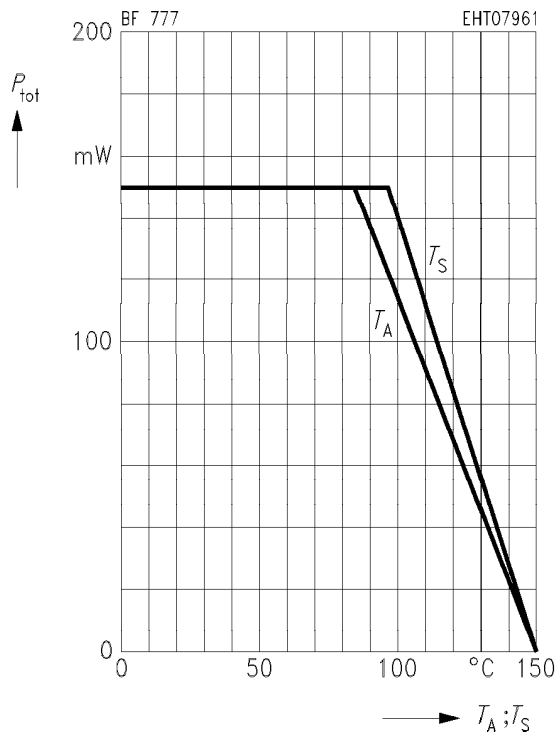
Collector-emitter breakdown voltage $I_C = 1\text{ mA}, I_B = 0$	$V_{(BR)CE0}$	20	–	–	V
Collector-emitter cutoff current $V_{CE} = 15\text{ V}, V_{BE} = 0$	I_{CES}	–	–	1	μA
Collector-base cutoff current $V_{CB} = 30\text{ V}, I_E = 0$ $V_{CB} = 15\text{ V}, I_E = 0$	I_{CBO}	– –	– –	1.0 0.5	
Emitter-base cutoff current $V_{EB} = 3\text{ V}, I_C = 0$	I_{EB0}	–	–	10	
DC current gain $I_C = 5\text{ mA}, V_{CE} = 10\text{ V}$	h_{FE}	30	–	200	–
Collector-emitter saturation voltage $I_C = 10\text{ mA}, I_B = 5\text{ mA}$ $I_C = 10\text{ mA}, I_B = 1\text{ mA}$	V_{CEsat}	– –	– 0.1	0.7 0.4	V

AC Characteristics

Transition frequency $I_C = 5\text{ mA}, V_{CE} = 10\text{ V}, f = 200\text{ MHz}$	f	1.4	2.2	–	GHz
Collector-base capacitance $V_{CB} = 10\text{ V}, V_{BE} = v_{be} = 0, f = 1\text{ MHz}$	C_{cb}	–	0.5	0.85	pF
Collector-emitter capacitance $V_{CE} = 10\text{ V}, V_{BE} = v_{be} = 0, f = 1\text{ MHz}$	C_{ce}	–	0.33	–	

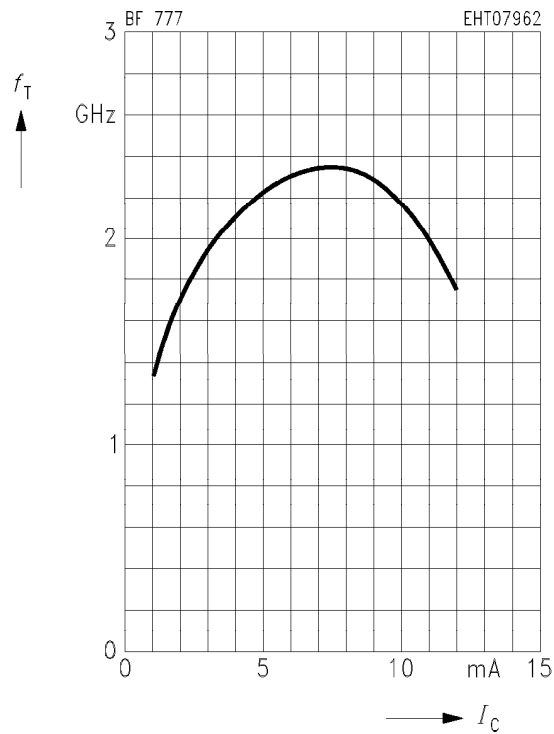
Total power dissipation $P_{tot} = f(T_A^*; T_S)$

*Package mounted on alumina



Transition frequency $f_T = f(I_C)$

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



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

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

