

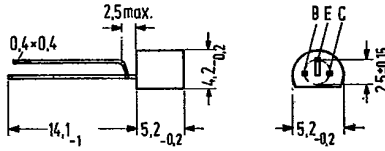
NPN Silicon RF Transistor

BF 502

SIEMENS AKTIENGESELLSCHAFT 4505 D

BF 502 is an NPN silicon planar RF transistor in TO 92 plastic package (10 A 3 DIN 41868). The transistor is particularly intended for use in VHF amplifiers, VHF mixers, and VHF oscillators.

Type	Ordering code
BF 502	Q62702-F572



Approx. weight 0.25 g Dimensions in mm

Maximum ratings ($T_{amb} = 25^{\circ}\text{C}$)

- Collector-emitter voltage
- Collector-base voltage
- Emitter-base voltage
- Collector current
- Collector peak current
- Base current
- Junction temperature
- Storage temperature range
- Total power dissipation

V_{CEO}	30	V
V_{CBO}	40	V
V_{EBO}	4	V
I_C	20	mA
I_{CM}	50	mA
I_B	5	mA
T_j	150	$^{\circ}\text{C}$
T_{stg}	-55 to +150	$^{\circ}\text{C}$
P_{tot}	500	mW

Thermal resistance

Junction to ambient air

R_{thJA}	≤ 250	K/W
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Static characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Collector cutoff current ($V_{CBO} = 25\text{ V}$)	I_{CBO}	≤ 100	nA
Collector-emitter breakdown voltage ($I_C = 1\text{ mA}$)	$V_{(BR)CEO}$	≥ 30	V
Collector-base breakdown voltage ($I_C = 10\text{ }\mu\text{A}$)	$V_{(BR)CBO}$	≥ 40	V
Emitter-base breakdown voltage ($I_E = 10\text{ }\mu\text{A}$)	$V_{(BR)EBO}$	≥ 4	V
DC current gain ($I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$)	h_{FE}	≥ 30	-
($I_C = 5\text{ mA}; V_{CE} = 10\text{ V}$)	h_{FE}	≥ 40	-
Collector-emitter saturation voltage ($I_C = 5\text{ mA}; I_B = 0.5\text{ mA}$)	V_{CEsat}	≤ 0.6	V

Dynamic characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Transition frequency ($I_C = 5\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$)	f_T	700 (≥ 350)	MHz
Noise figure ($I_C = 3\text{ mA}; V_{CE} = 10\text{ V}; f = 200\text{ MHz}; R_g = 60\text{ }\Omega$)	NF	3 (<5)	dB
Collector-base capacitance ($f = 1\text{ MHz}; V_{CB} = 10\text{ V}; V_{BE} = 0\text{ V}$) ¹⁾	C_{CB}	≤ 0.35	pF
Output admittance ($I_C = 1\text{ mA}; V_{CE} = 10\text{ V}; f = 10.7\text{ MHz}$)	g_{22e}	≤ 10.5	μS

¹⁾ Third terminal at screening potential.