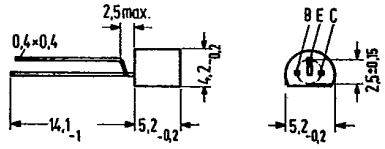
NPN Silicon RF Transistor

BF 505

BF 505 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 in common emitter configuratin, VHF mixers and VHF/UHF oscillators.

Type	Ordering code
BF 505	Q62702-F573



Approx. weight 0.25 g Dimensions in mm

Maximum ratings (T_{amb} = 25 °C)

Collector-emitter voltage	V_{CEO}	25	V
Collector-base voltage	V_{CBO}	30	V
Emitter-base voltage	V_{EBO}	3	V
Collector current	I_C	20	mA
Collector peak current	I_{CM}	50	mA
Base current	I_B	5	mA
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to +150	°C
Total power dissipation	P_{tot}	500	mW

Thermal resistance

Junction to ambient air	R_{thJA}	≤250	K/W

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Static characteristics (T_{amb} = 25 °C)

Collector cutoff current (V_{CBO} = 25 V)	I_{CBO}	≤100	nA
Collector-emitter breakdown voltage (I_C = 1 mA)	$V_{(BR)CEO}$	≥25	V
Collector-base breakdown voltage (I_C = 10 µA)	$V_{(BR)CBO}$	≥30	V
Emitter-base breakdown voltage (I_E = 10 µA)	$V_{(BR)EBO}$	≥3	V
DC current gain (I_C = 1 mA; V_{CE} = 10 V)	h_{FE}	≥30	–
(I_C = 5 mA; V_{CE} = 10 V)	h_{FE}	≥40	–
Base-emitter voltage (I_C = 5 mA; V_{CE} = 10 V)	V_{BE}	≤0.95	V
Collector-emitter saturation voltage (I_C = 5 mA; I_B = 0.5 mA)	V_{CEsat}	≤0.6	V

Dynamic characteristics (T_{amb} = 25 °C)

Transition frequency (I_C = 5 mA; V_{CE} = 10 V; f = 100 MHz)	f_T	≥750	MHz
Noise figure (I_C = 3 mA; V_{CE} = 10 V; f = 200 MHz; R_g = 60 Ω)	NF	3	dB
Collector-base capacitance (f = 1 MHz; V_{CB} = 10 V; V_{BE} = 0 V)[1]	C_{CB}	≤0.5	pF
Collector-emitter capacitance (f = 1 MHz; V_{CB} = 10 V; V_{BE} = 0 V)[1]	C_{CE}	≤1.1	pF

1) Third terminal at screening potential