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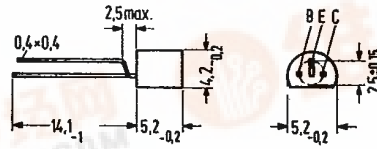
T-31-21
BF 505

NPN Silicon RF Transistor

SIEMENS AKTIENGESELLSCHAFT 04509 D

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 configuration, VHF mixers and VHF/UHF oscillators.

Type	Ordering code
BF 505	Q62702-F573



Approx. weight 0.25 g Dimensions in mm

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

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	$^{\circ}\text{C}$
Storage temperature range	T_{stg}	-55 to +150	$^{\circ}\text{C}$
Total power dissipation	P_{tot}	500	mW

Thermal resistance

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

Collector cutoff current ($V_{CBO} = 25\text{ V}$)	I_{CBO}	≤ 100	nA
Collector-emitter breakdown voltage ($I_C = 1\text{ mA}$)	$V_{(BR)CEO}$	≥ 25	V
Collector-base breakdown voltage ($I_C = 10\text{ }\mu\text{A}$)	$V_{(BR)CBO}$	≥ 30	V
Emitter-base breakdown voltage ($I_E = 10\text{ }\mu\text{A}$)	$V_{(BR)EBO}$	≥ 3	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	-
Base-emitter voltage ($I_C = 5\text{ mA}$; $V_{CE} = 10\text{ V}$)	V_{BE}	≤ 0.95	V
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	≥ 750	MHz
Noise figure ($I_C = 3\text{ mA}$; $V_{CE} = 10\text{ V}$; $f = 200\text{ MHz}$; $R_g = 60\text{ }\Omega$)	NF	3	dB
Collector-base capacitance ($f = 1\text{ MHz}$; $V_{CB} = 10\text{ V}$; $V_{BE} = 0\text{ V}$) ¹⁾	C_{CB}	≤ 0.5	pF
Collector-emitter capacitance ($f = 1\text{ MHz}$; $V_{CB} = 10\text{ V}$; $V_{BE} = 0\text{ V}$) ¹⁾	C_{CE}	≤ 1.1	pF

1) Third terminal at screening potential