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T-31-21

BF 505

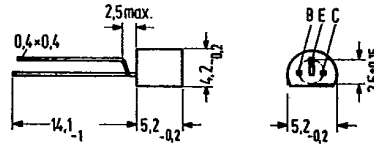
NPN Silicon RF Transistor

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

V_{CEO}	25	V
V_{CBO}	30	V
V_{EBO}	3	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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555

1932

E-09

NPN Silicon RF Transistor

BF 505

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

Collector cutoff current

($V_{CBO} = 25\text{ V}$)

I_{CBO}	≤ 100	nA
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Collector-emitter breakdown voltage

($I_C = 1\text{ mA}$)

$V_{(BR)CEO}$	≥ 25	V
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Collector-base breakdown voltage

($I_C = 10\text{ }\mu\text{A}$)

$V_{(BR)CBO}$	≥ 30	V
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Emitter-base breakdown voltage

($I_E = 10\text{ }\mu\text{A}$)

$V_{(BR)EBO}$	≥ 3	V
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DC current gain

($I_C = 1\text{ mA}$; $V_{CE} = 10\text{ V}$)

h_{FE}	≥ 30	-
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($I_C = 5\text{ mA}$; $V_{CE} = 10\text{ V}$)

h_{FE}	≥ 40	-
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Base-emitter voltage

($I_C = 5\text{ mA}$; $V_{CE} = 10\text{ V}$)

V_{BE}	≤ 0.95	V
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Collector-emitter saturation voltage

($I_C = 5\text{ mA}$; $I_B = 0.5\text{ mA}$)

V_{CEsat}	≤ 0.6	V
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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
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Noise figure

($I_C = 3\text{ mA}$; $V_{CE} = 10\text{ V}$; $f = 200\text{ MHz}$; $R_g = 60\text{ }\Omega$)

NF	3	dB
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Collector-base capacitance

($f = 1\text{ MHz}$; $V_{CB} = 10\text{ V}$; $V_{BE} = 0\text{ V}$)¹⁾

C_{CB}	≤ 0.5	pF
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Collector-emitter capacitance

($f = 1\text{ MHz}$; $V_{CB} = 10\text{ V}$; $V_{BE} = 0\text{ V}$)¹⁾

C_{CE}	≤ 1.1	pF
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1) Third terminal at screening potential