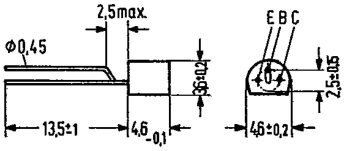
PNP Silicon RF Transistor

BF 324

for large-signal VHF stages

BF 324 is an epitaxial PNP silicon planar transistor in TO 92 plastic package (10 A 3 DIN 41868). It is particularly outstanding for a low reverse transfer capacitance and is preferably used in common base configurations, e.g. in VHF tuner input stages.

Type	Ordering code
BF 324	Q62702-F311



Approx. weight 0.25 g Dimensions in mm

Maximum ratings

Collector-emitter voltage	$-V_{CEO}$	30	V
Collector-base voltage	$-V_{CBO}$	30	V
Emitter-base voltage	$-V_{EBO}$	4	V
Collector current	$-I_C$	25	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}	250	mW

Thermal resistance

Junction to ambient air	R_{thJA}	≤420	K/W

T-31-17

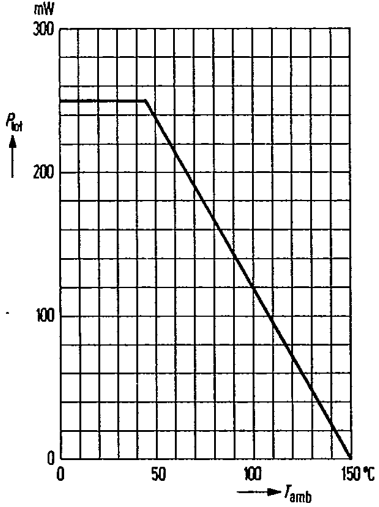
Static characteristics (T_{amb} = 25 °C)

Collector cutoff current ($-V_{CB}$ = 30 V; I_E = 0)	$-I_{CBO}$	<50	nA
Collector-emitter breakdown voltage ($-I_C$ = 10 mA; I_B = 0)	$-V_{(BR)CEO}$	>30	V
Emitter-base breakdown voltage ($-I_E$ = 10 µA; I_C = 0)	$-V_{(BR)EBO}$	>4	V
DC current gain ($-V_{CE}$ = 10 V; $-I_C$ = 1 mA)	h_{FE}	45	–
($-V_{CE}$ = 10 V; $-I_C$ = 4 mA)	h_{FE}	50 (25 to 160)	–
Base-emitter voltage ($-V_{CE}$ = 10 V; $-I_C$ = 4 mA)	$-V_{BE}$	0.76	V

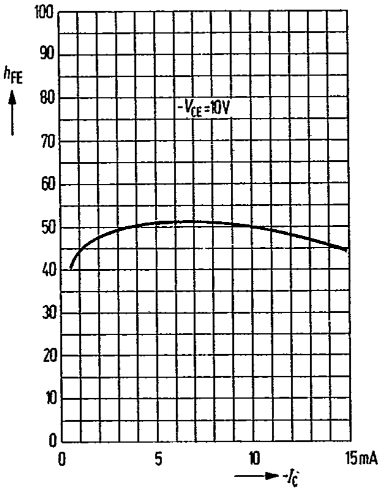
Dynamic characteristics (T_{amb} = 25 °C)

Transition frequency (f = 100 MHz) ($-I_C$ = 1 mA; $-V_{CE}$ = 10 V)	f_T	350	MHz
($-I_C$ = 4 mA; $-V_{CE}$ = 10 V)	f_T	450	MHz
($-I_C$ = 8 mA; $-V_{CE}$ = 10 V)	f_T	440	MHz
Reverse transfer capacitance ($-V_{CB}$ = 10 V; $-V_{BE}$ = 0; f = 1 MHz)	C_{12b}	0.1	pF
Noise figure ($-I_C$ = 2 mA; $-V_{CE}$ = 10 V); f = 100 MHz; R_g = 60 Ω)	NF	3	dB

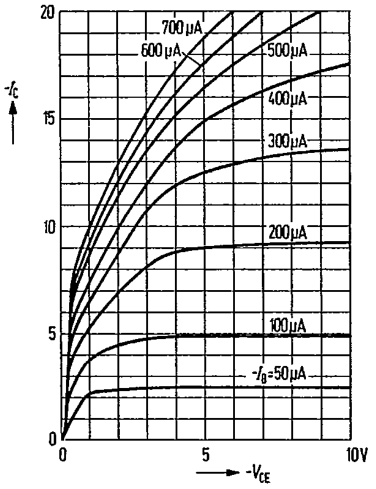
Total perm. power dissipation versus temperature
$P_{tot} = f\,(T_{amb})$



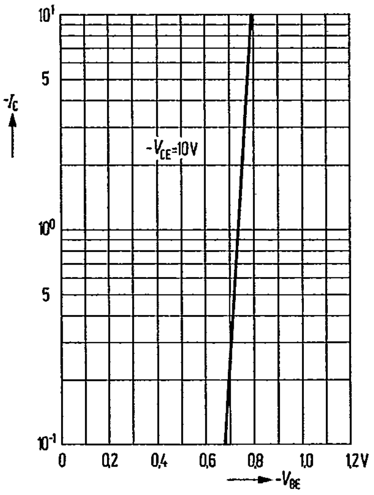
DC current gain $h_{FE} = f\,(I_C)$
$-V_{CE} = 10\ V$



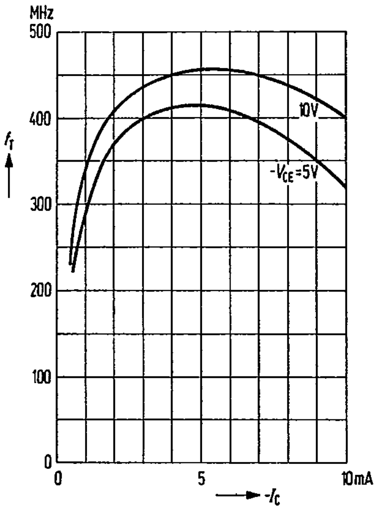
Output characteristics $I_C = f\,(V_{CE})$
I_B = parameter



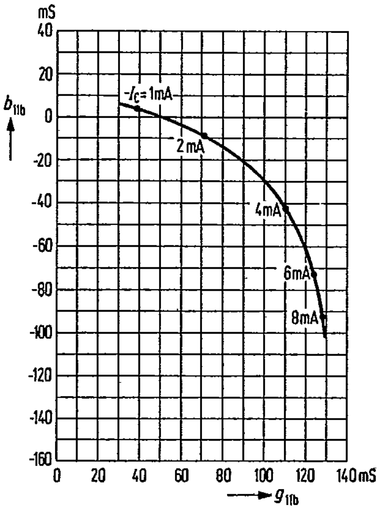
Input characteristic $I_C = f\,(V_{BE})$
$-V_{CE} = 10\ V$



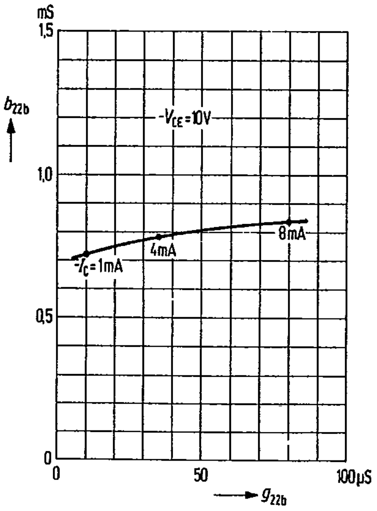
Transition frequency $f_T = f(I_C)$
V_{CE} = parameter, f = 100 MHz



Input admittance Y_{11b}
(common base configuration)
f = 100 MHz; $-V_{CE}$ = 10 V



Output admittance Y_{22b}
(common base configuration)
f = 100 MHz; $-V_{CE}$ = 10 V



Short-circuit forward transfer admittance
$Y_{21b} = f(I_C)$
(common base configuration)
$-V_{CE}$ = 10 V