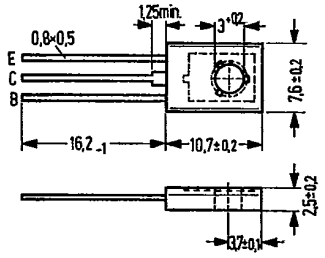
PNP Silicon Planar Transistors

BF 470
BF 472

BF 470 and BF 472 are epitaxial PNP silicon planar transistors in TO 126 plastic package (12 A 3 DIN 41869, sheet 4). The collector is conductively connected to the metallic mounting area of the transistor. With the complementary types BF 469 and BF 471 these transistors are particularly suitable for use in video B output stages of TV receivers.

Type	Ordering code
BF 470	Q62702-F498
BF 472	Q62702-F506
Spring washer A 3 DIN 137	Q62902-B63
Mica washer	Q62902-B62



Approx. weight 0.5 g Dimensions in mm

Maximum ratings		BF 470	BF 472	
Collector-base voltage	$-V_{CBO}$	250	300	V
Collector-emitter voltage	$-V_{CEO}$	250	–	V
Collector-emitter voltage	$-V_{CER}$	–	300	V
Emitter-base voltage	$-V_{EBO}$	5	5	V
Collector current	$-I_C$	30	30	mA
Collector peak current	$-I_{CM}$	100	100	mA
Junction temperature	T_j	150	150	°C
Storage temperature range	T_{stg}	–65 to +150	–65 to +150	°C
Total power dissipation ($T_{case} \leq 110$°C)	P_{tot}	2	2	W
Thermal resistance				
Junction to ambient air [1]	R_{thJA}	≤100	≤100	K/W
Junction to case	R_{thJC}	≤20	≤20	K/W

1) For fixing the transistors with max. 4 mm long leads on PCBs with a 10 mm^2 large copper area for the collector terminal.

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Static characteristics (T_{amb} = 25 °C)		BF 470	BF 472	
Collector-base breakdown voltage ($-I_C$ = 10 µA)	$-V_{(BR)CBO}$	>250	>300	V
Collector-emitter breakdown voltage ($-I_C$ = 1 µA)	$-V_{(BR)CEO}$	>250	–	V
Collector-emitter breakdown voltage (R_{BE} = 2.7 kΩ)	$-V_{(BR)CER}$	–	>300	V
Emitter-base breakdown voltage (I_E = 10 µA)	$-V_{(BR)EBO}$	>5	>5	V
Collector cutoff current ($-V_{CE}$ = 200 V; R_{BE} = 2.7 kΩ; T_{amb} = 150 °C)	$-I_{CER}$	≤10	≤10	µA
Collector cutoff current ($-V_{CB}$ = 200 V)	$-I_{CBO}$	≤10	≤10	nA
Emitter cutoff current ($-V_{EB}$ = 5 V)	$-I_{EBO}$	≤10	≤10	µA
Collector-emitter saturation voltage ($-I_C$ = 25 mA; T_j = 150 °C)	$-V_{CEsat\ RF}$	20	–	V
($-I_C$ = 25 mA; T_{amb} = 150 °C)		–	20	V
DC current gain ($-I_C$ = 25 mA; $-V_{CE}$ = 20 V)	h_{FE}	≥50	≥40	–
Dynamic characteristics (T_{amb} = 25 °C)				
Transition frequency (V_{CE} = 10 V; $-I_C$ = 10 mA);	f_T	≥60	≥60	MHz
Reverse transfer capacitance ($-V_{CB}$ = 30 V)	$-C_{12e}$	≤1.8	≤1.8	pF
Feedback time constant ($-V_{CB}$ = 20 V; I_E = 10 mA; f = 10.7 MHz)	$r_{bb'}\,c_{b'c}$	≤90	≤90	ps

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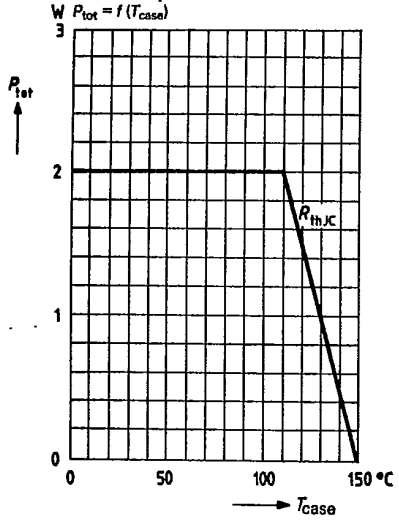
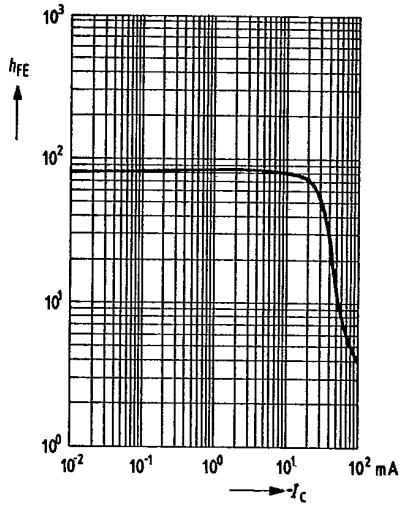
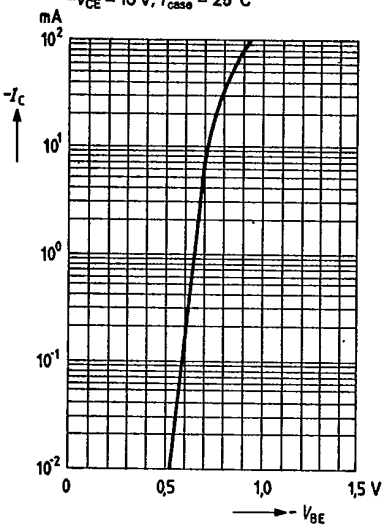
Total perm. power dissipation
versus temperature
$P_{tot} = f(T_{case})$



DC current gain $h_{FE} = f(I_C)$
$-V_{CE} = 10$ V; $T_{case} = 25$ °C



Collector current $I_C = f(V_{BE})$
$-V_{CE} = 10$ V; $T_{case} = 25$ °C



Transition frequency $f_T = f(I_C)$
$-V_{CE} = 10$ V; $T_{case} = 25$ °C