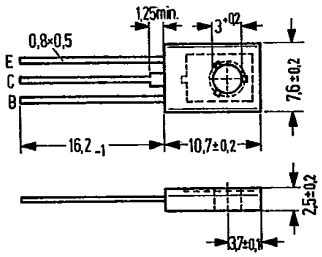
NPN Silicon Planar Transistors

BF 469
BF 471

SIEMENS AKTIENGESELLSCHAF

BF 469 and BF 471 are epitaxial NPN 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 470 and BF 472, these transistors are particularly suitable for use in video B output stages of TV receivers.

Type	Ordering code
BF 469	Q62702-F497
BF 471	Q62702-F507
Spring washer A3 DIN 137	Q62902-B63
Mica washer	Q62902-B62



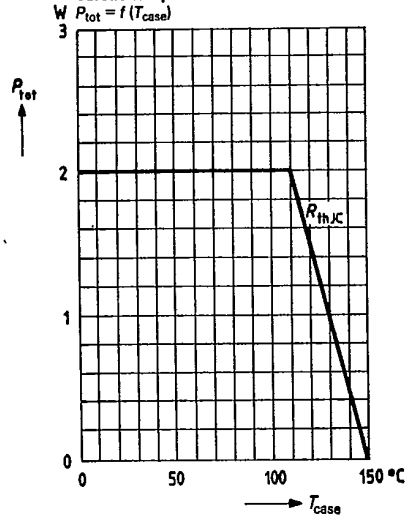
Approx. weight 0.5 g Dimensions in mm
Transistor fixing with M 3 screw;
starting torque max. 0.8 Nm;
washer or spring washer should be used.

Maximum ratings		BF 469	BF 471	
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

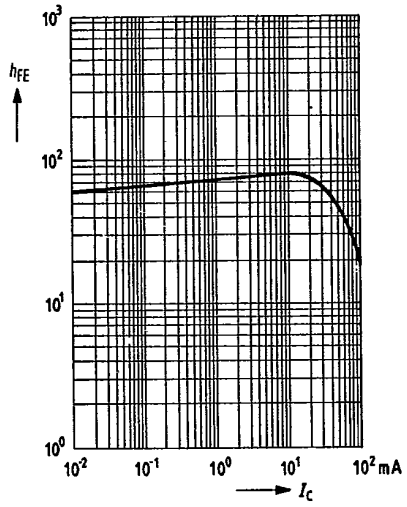
1) For fixing the transistors with max. 4 mm long leads on PCBs with a 10 mm^2 large copper area for the collector terminal.

Static characteristics (T_{amb} = 25 °C)		**BF 469**	**BF 471**	
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)	$V_{CEsat\ HF}$	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

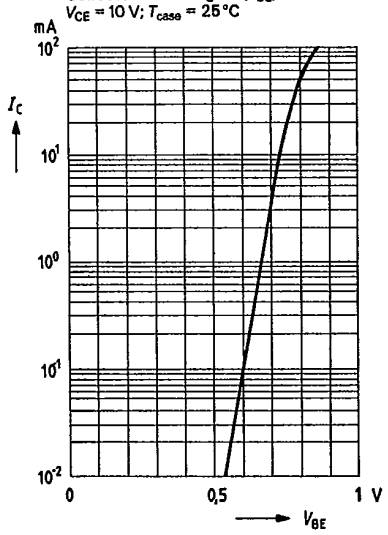
Total perm. power dissipation
versus temperature
$P_{tot} = f(T_{case})$



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