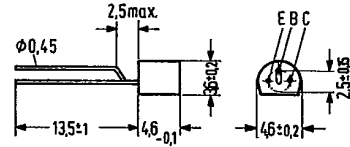


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**PNP Silicon Planar Transistor** **BF 939**  
 SIEMENS AKTIENGESELLSCHAFT 4556 D

BF 939 is a PNP silicon RF planar transistor in TO 92 plastic package (DIN 41868). The transistor is particularly suitable for controllable VHF input stages in TV tuners.

Type	Ordering code
BF 939	Q62702-F 528



Approx. weight 0.25 g Dimensions in mm

**Maximum ratings**

Collector-emitter voltage	$-V_{CEO}$	30	V
Collector-base voltage	$-V_{CBO}$	30	V
Base-emitter voltage	$-V_{EBO}$	3	V
Collector current	$-I_C$	20	mA
Base current	$-I_B$	2	mA
Storage temperature range	$T_{stg}$	-55 to +150	°C
Junction temperature	$T_j$	150	°C
Total power dissipation ( $T_{amb} = 60^\circ\text{C}$ )	$P_{tot}$	350	mW

**Thermal resistance**

Junction to ambient air	$R_{thJA}$	<500	K/W
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**Static characteristics ( $T_{amb} = 25^{\circ}\text{C}$ )**

$(-V_{CE} = 20\text{ V}; -V_{BE} = 0)$	$-I_{CES}$	<100	nA
DC current gain $(-I_C = 2\text{ mA}; -V_{CE} = 10\text{ V})$ $(-I_C = 7\text{ mA}; -V_{CE} = 5\text{ V})$	$h_{FE}$	50 (>30)	-
	$h_{FE}$	(>10)	-

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

Transition frequency $(-I_C = 2\text{ mA}; -V_{CE} = 10\text{ V}; f = 100\text{ MHz})$	$f_T$	750	MHz
Reverse transfer capacitance $(-I_C = 1\text{ mA}; -V_{CE} = 10\text{ V})$	$C_{12e}$	0.63	pF
Noise figure $(-I_C = 2\text{ mA}; -V_{CE} = 10\text{ V};$ $f = 200\text{ MHz}; R_g = 60\ \Omega)$	NF	3	dB
Power gain $(-I_C = 2\text{ mA}; -V_{CE} = 10\text{ V}; f = 200\text{ MHz};$ $R_L = 1\text{ k}\Omega; R_g = 60\ \Omega)$	$G_{pb}$	16	dB
Control range of power gain $(-V_{CC} = 12\text{ V}; R_{cc} = 1\text{ k}\Omega; f = 200\text{ MHz};$ $I_C \leq 9\text{ mA})$	$G_{pb}$	>35	dB
Min. interference voltage <sup>1)</sup> $(f = 200\text{ MHz}; -I_C = 2\text{ mA})$	$V_{int\ 1\%}$	12	mV

1)  $V_{int\ 1\%}$  is the rms value of half the EMF of a 100% sine modulated TV carrier with  $R_g = 75\ \Omega$ , which causes 1% AM on the useful carrier.