

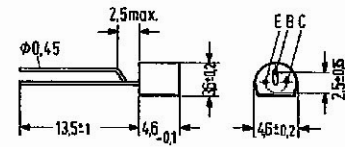
PNP Silicon Planar Transistor

BF 939

SIEMENS AKTIENGESELLSCHAFT

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

C_{12e}	0.63	pF
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Noise figure($-I_C = 2\text{ mA}$; $-V_{CE} = 10\text{ V}$; $f = 200\text{ MHz}$; $R_g = 60\ \Omega$)

NF	3	dB
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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
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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
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Min. interference voltage¹⁾($f = 200\text{ MHz}$; $-I_C = 2\text{ mA}$)

$V_{int\ 1\%}$	12	mV
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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.