

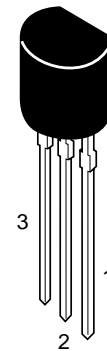
2SC4628

Silicon NPN Planar High Frequency Amplifier

Table 1 Absolute Maximum Ratings
($T_a = 25^\circ\text{C}$)

Item	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	20	V
Collector to emitter voltage	V_{CEO}	20	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_{C}	20	mA
Collector power dissipation	P_{C}	200	mW
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

TO-92 (2)

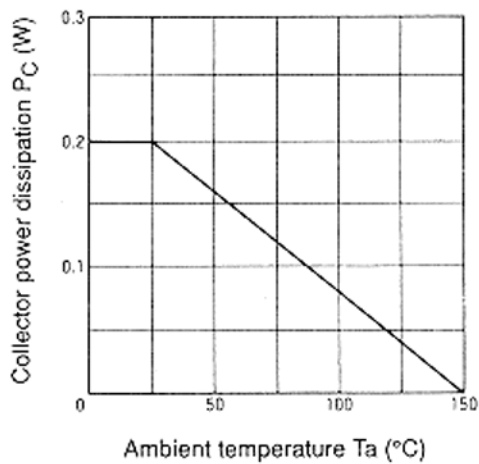


1. Emitter
2. Collector
3. Base

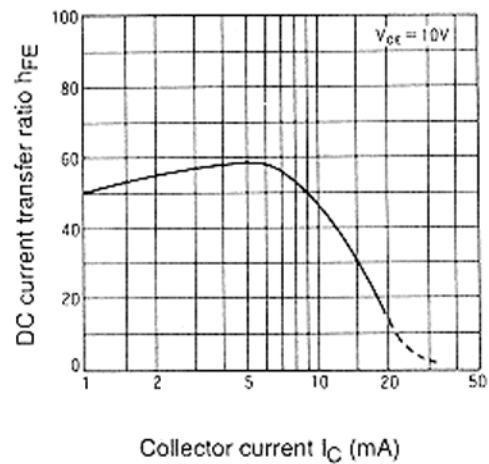
Table 2 Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	20	—	—	V	$I_{\text{C}} = 10 \mu\text{A}$, $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	20	—	—	V	$I_{\text{C}} = 1 \text{ mA}$, $R_{\text{BE}} = \infty$
Emitter cutoff current	I_{EBO}	—	—	10	μA	$V_{\text{EB}} = 3 \text{ V}$, $I_{\text{C}} = 0$
Collector cutoff current	I_{CBO}	—	—	1	μA	$V_{\text{CB}} = 15 \text{ V}$, $I_{\text{E}} = 0$
DC current transfer ratio	h_{FE}	60	—	320	—	$V_{\text{CE}} = 10 \text{ V}$, $I_{\text{C}} = 2 \text{ mA}$
Gain bandwidth product	f_{T}	600	—	—	MHz	$V_{\text{CE}} = 10 \text{ V}$, $I_{\text{C}} = 2 \text{ mA}$
Reverse transfer capacitance	C_{re}	—	—	0.9	pF	$V_{\text{CB}} = 10 \text{ V}$, $I_{\text{E}} = 0$, emitter common, $f = 1 \text{ MHz}$
Power gain	PG	10	—	—	dB	$V_{\text{CB}} = 10 \text{ V}$, $I_{\text{C}} = 2 \text{ mA}$, $f = 800 \text{ MHz}$
Noise figure	NF	—	—	7.0	dB	

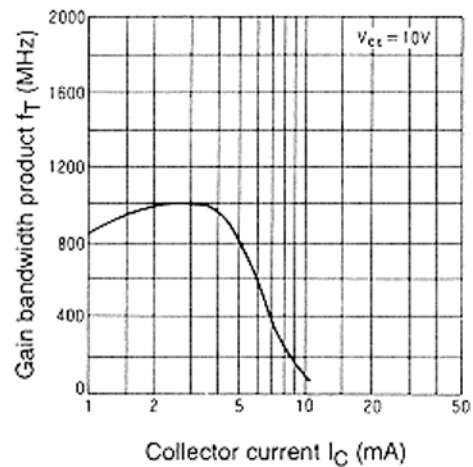
Maximum collector dissipation curve



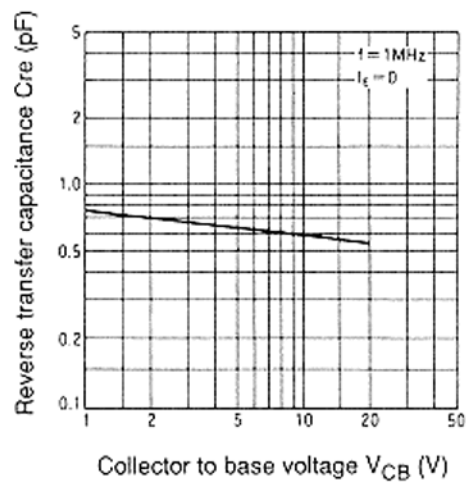
DC current transfer ratio vs. collector current



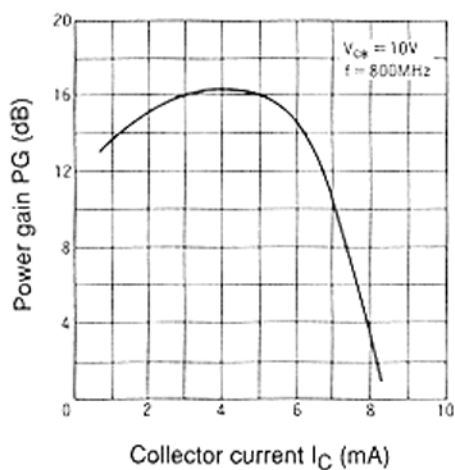
Gain bandwidth product vs. collector current



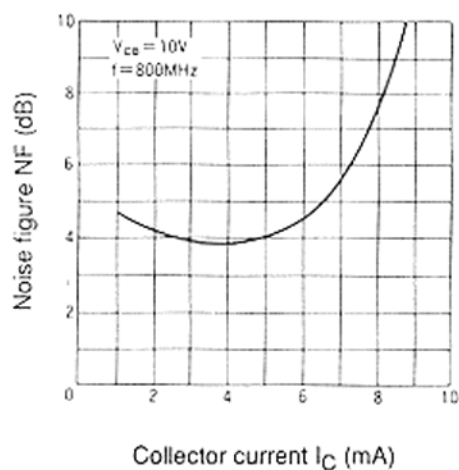
Reverse transfer capacitance vs. collector to base voltage



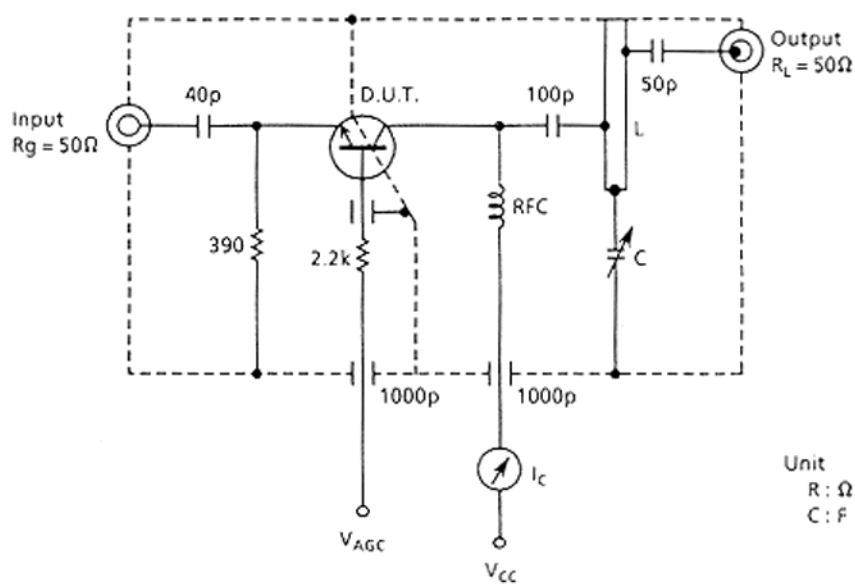
Power gain vs. collector current



Noise figure vs. collector current



800 MHz Power gain and noise figure test circuit



Unit
R: Ω
C: F

- C : 0.5 to 10 pF variable capacitance
- L : $\lambda/4$ silver plated copper $26 \times 3 \times 1$ (mm)
Collector tap to ground distance: 7 mm
Output tap to ground distance: 3 mm
- RFC : 0.17 mm copper wire, 2.4 mm inside dia, 16 turn
-3 dB down band width is 40 MHz