

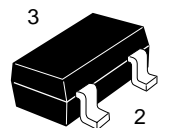
## 2SC4462

### Silicon NPN Epitaxial UHF Frequency Converter

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

Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	30	V
Collector to emitter voltage	$V_{CEO}$	25	V
Emitter to base voltage	$V_{EBO}$	4	V
Collector current	$I_C$	20	mA
Collector power dissipation	$P_C$	100	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

CMPAK



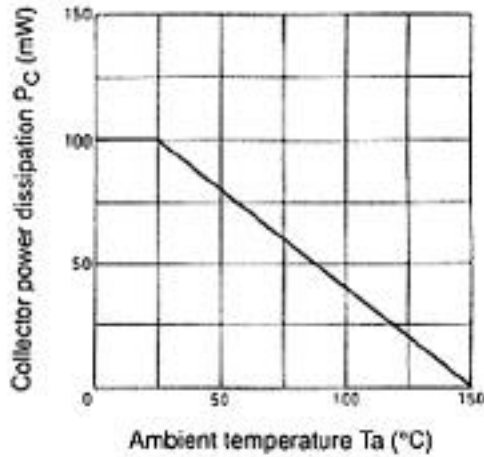
1. Emitter
2. Base
3. Collector

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

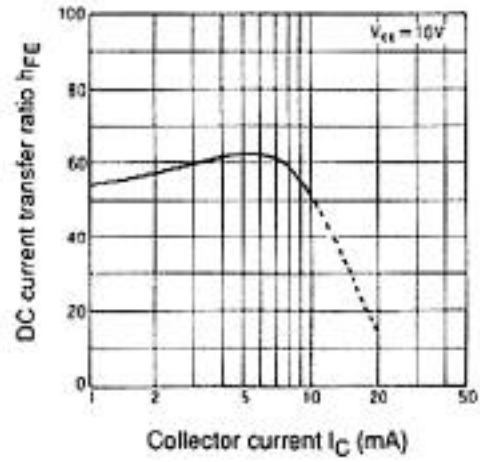
Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	$I_C = 10 \mu\text{A}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	25	—	—	V	$I_C = 1 \text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	4	—	—	V	$I_E = 10 \mu\text{A}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu\text{A}$	$V_{CB} = 10 \text{ V}$ , $I_E = 0$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	5	V	$I_C = 10 \text{ mA}$ , $I_B = 1 \text{ mA}$
DC current transfer ratio	$h_{FE}$	30	—	—	—	$V_{CE} = 10 \text{ V}$ , $I_C = 3 \text{ mA}$
Gain bandwidth product	$f_T$	700	1000	—	MHz	$V_{CE} = 10 \text{ V}$ , $I_C = 5 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	—	0.8	pF	$V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$
Conversion gain	CG	—	7.0	—	dB	$V_{CC} = 12 \text{ V}$ , $I_C = 1 \text{ mA}$ , $f = 900 \text{ MHz}$ ,
Noise figure	NF	—	10.0	—	dB	$f_{OSC} = 930 \text{ MHz}$ (0 dBm), $f_{out} = 30 \text{ MHz}$

- Marking is "EC".

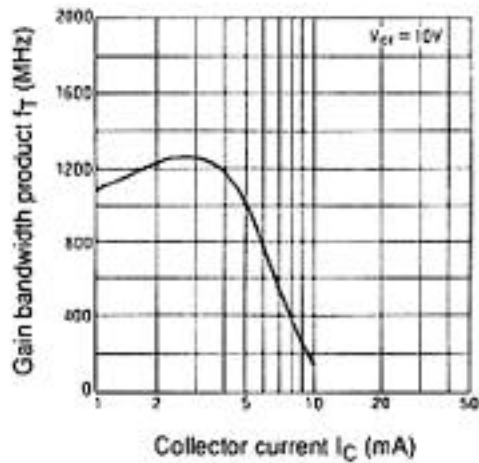
Maximum collector dissipation curve



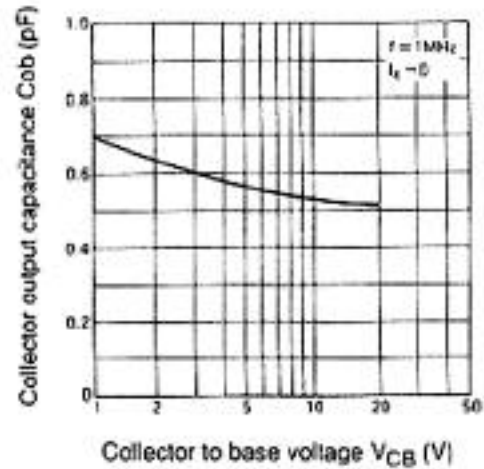
DC current transfer ratio vs. collector current



Gain bandwidth product vs. collector current

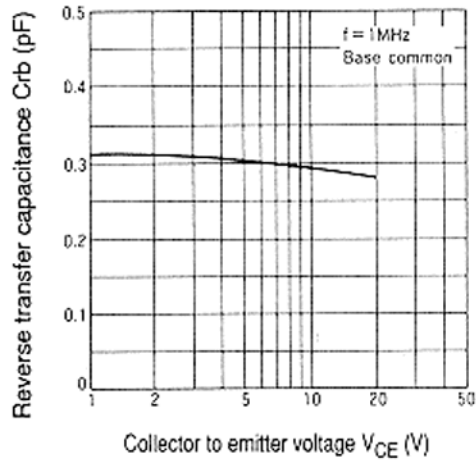


Collector output capacitance vs. collector to base voltage

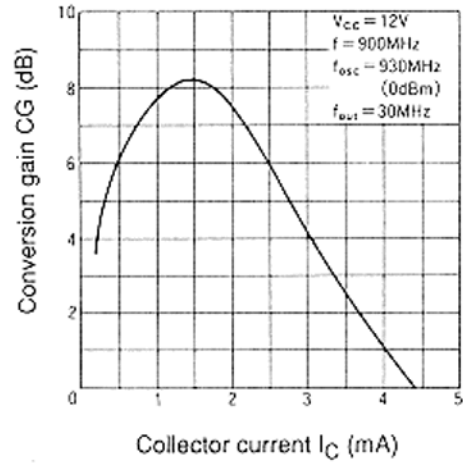


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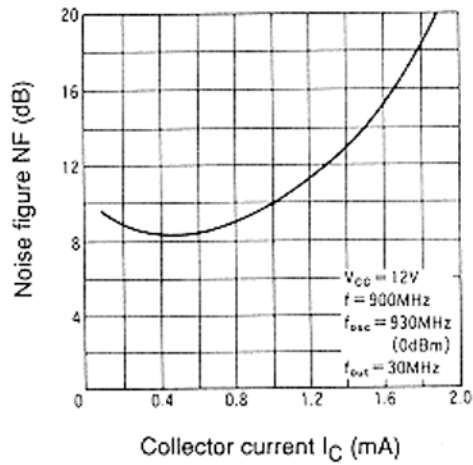
Reverse transfer capacitance vs. collector to emitter voltage

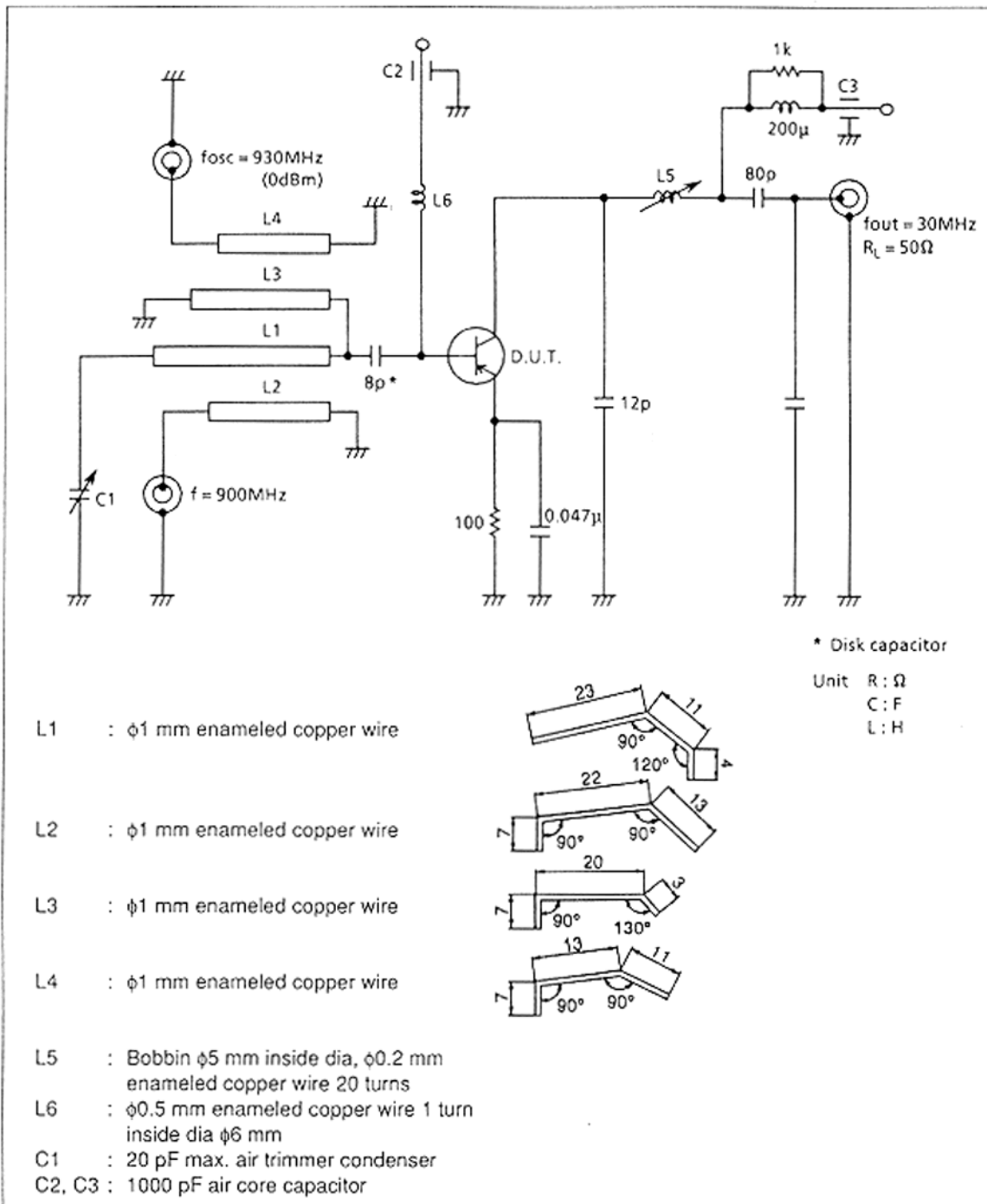


Conversion gain vs. collector current



Noise figure vs. collector current





Conversion Gain and Noise Figure Test Circuit