
2SC3127, 2SC3128, 2SC3510

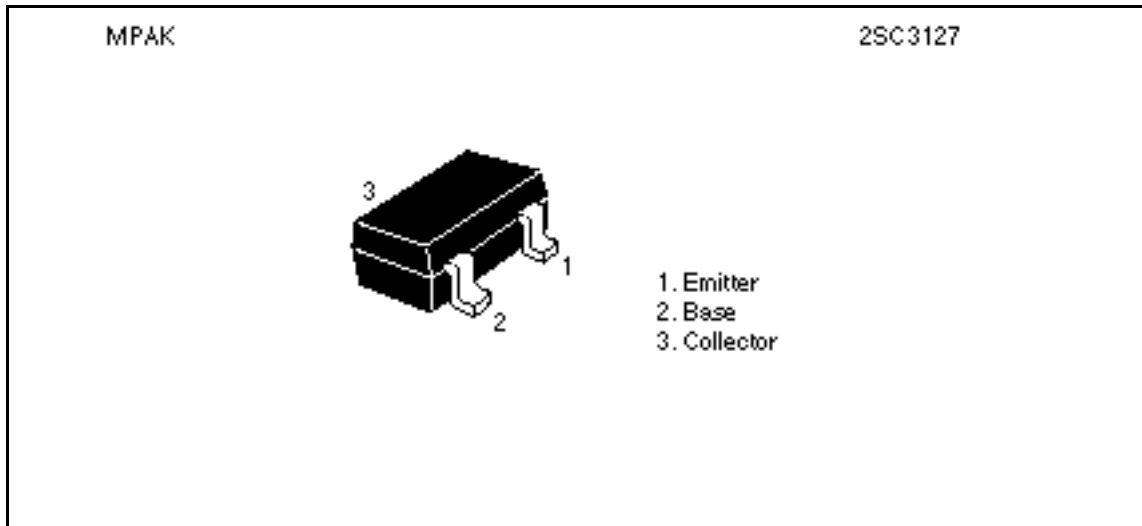
Silicon NPN Epitaxial

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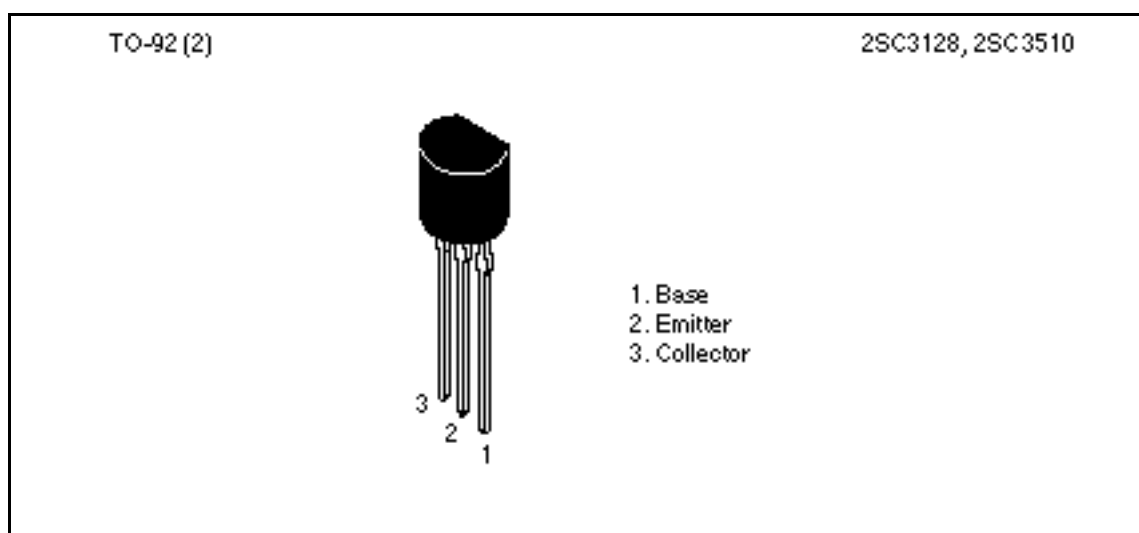
Application

UHF/VHF wide band amplifier

Outline



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Absolute Maximum Ratings (Ta = 25°C)

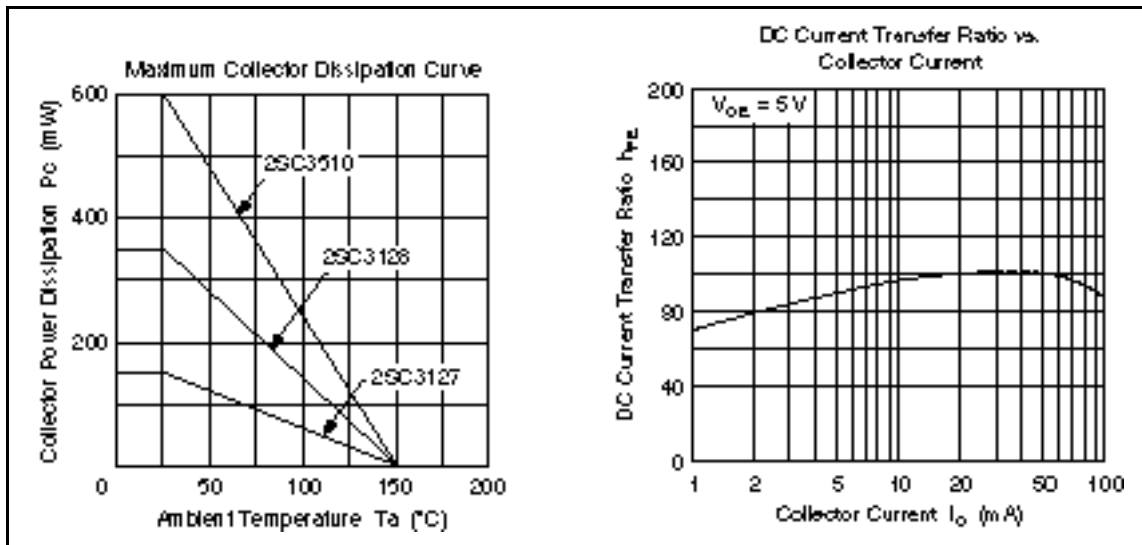
Item	Symbol	2SC3127*1	2SC3128	2SC3510	Unit
Collector to base voltage	V_{CBO}	20	20	20	V
Collector to emitter voltage	V_{CEO}	12	12	12	V
Emitter to base voltage	V_{EBO}	3	3	3	V
Collector current	I_C	50	50	50	mA
Collector power dissipation	P_C	150	350	600	mW
Junction temperature	T_j	150	150	150	°C
Storage temperature	T_{stg}	–55 to +150	–55 to +150	–55 to +150	°C

Note: 1. Marking for 2SC3127 is "ID–".

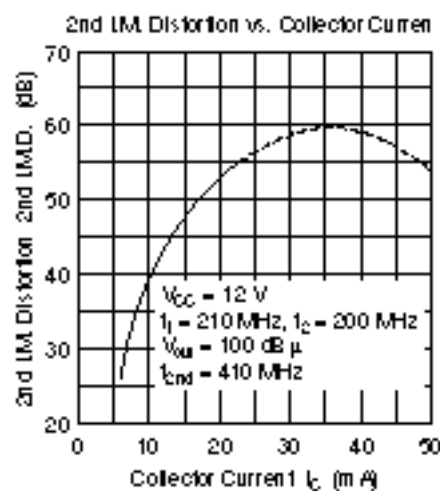
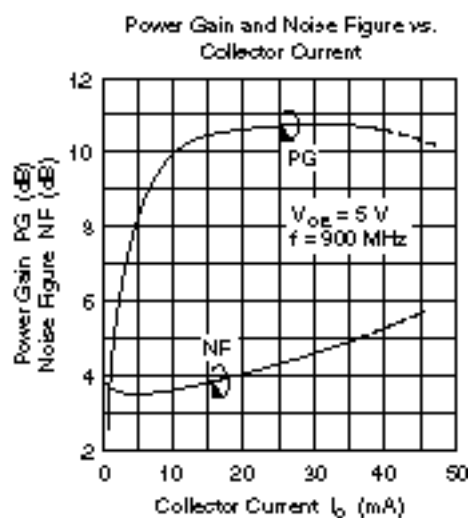
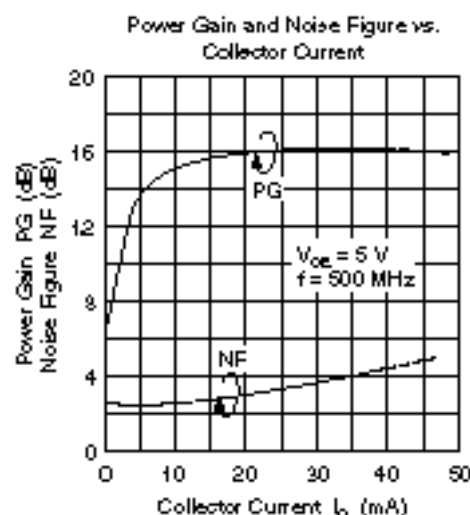
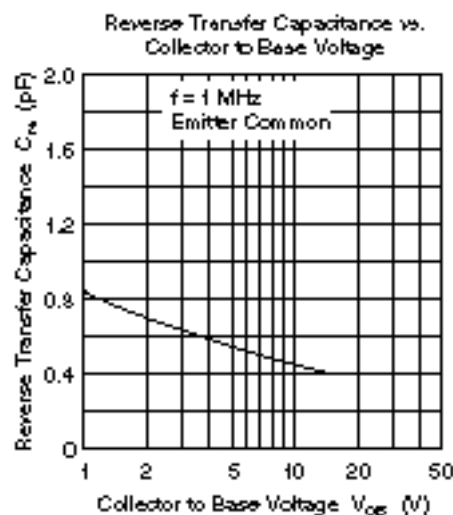
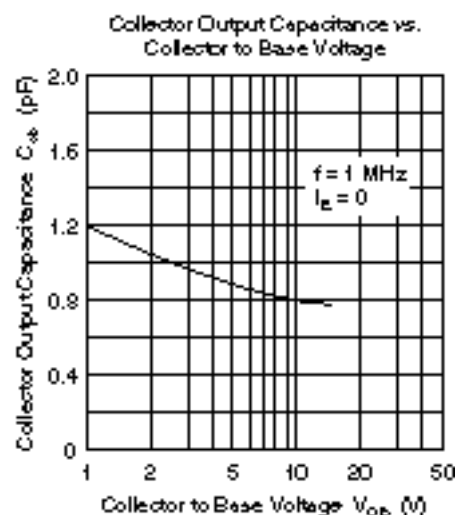
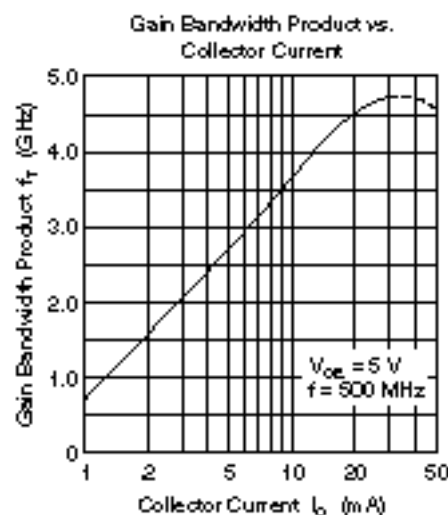
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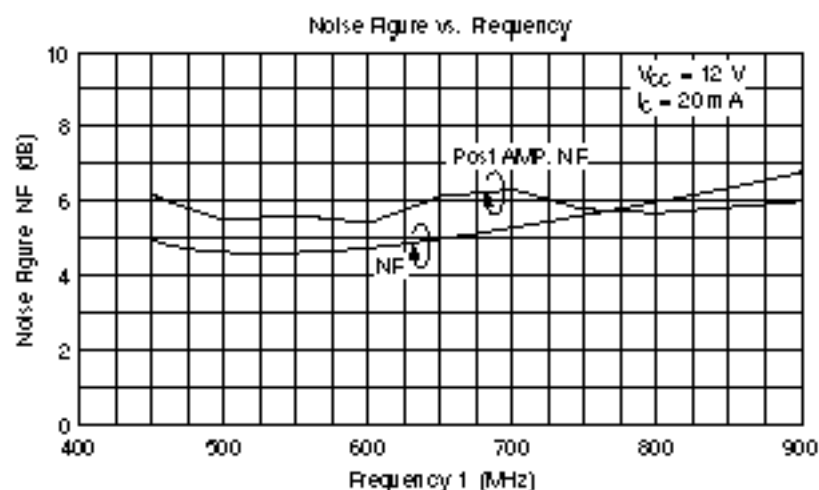
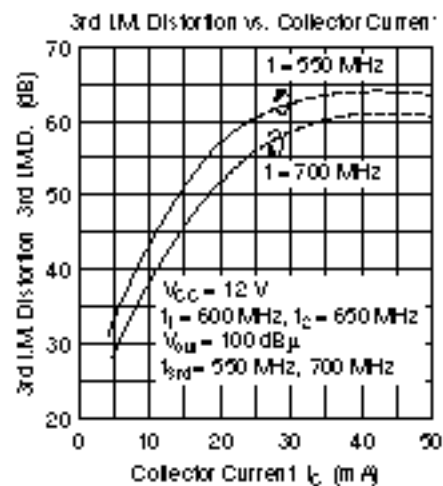
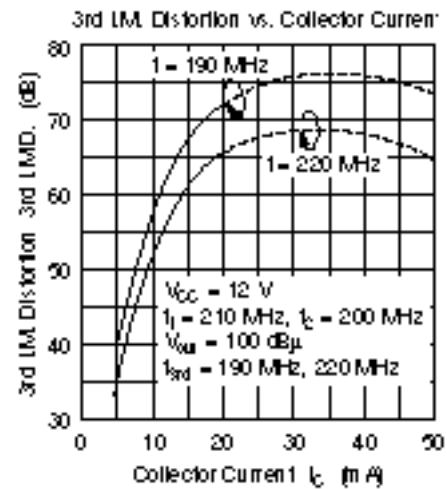
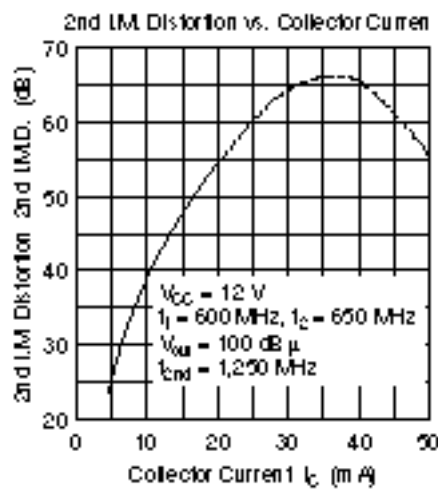
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	20	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	12	—	—	V	$I_C = 1 \text{ mA}, R_{BE} =$
Emitter cutoff current	I_{EBO}	—	—	10	μA	$V_{EB} = 3 \text{ V}, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 12 \text{ V}, I_E = 0$
DC current transfer ratio	h_{FE}	30	90	200		$V_{CE} = 5 \text{ V}, I_C = 20 \text{ mA}$
Collector output capacitance	C_{ob}	—	0.9	1.5	pF	$V_{CB} = 5 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Gain bandwidth product	f_T	3.5	4.5	—	GHz	$V_{CE} = 5 \text{ V}, I_C = 20 \text{ mA}$
Power gain	PG	—	10.5	—	dB	$V_{CE} = 5 \text{ V}, I_C = 20 \text{ mA},$ $f = 900 \text{ MHz}$
Noise figure	NF	—	2.2	—	dB	$V_{CE} = 5 \text{ V}, I_C = 5 \text{ mA},$ $f = 900 \text{ MHz}$

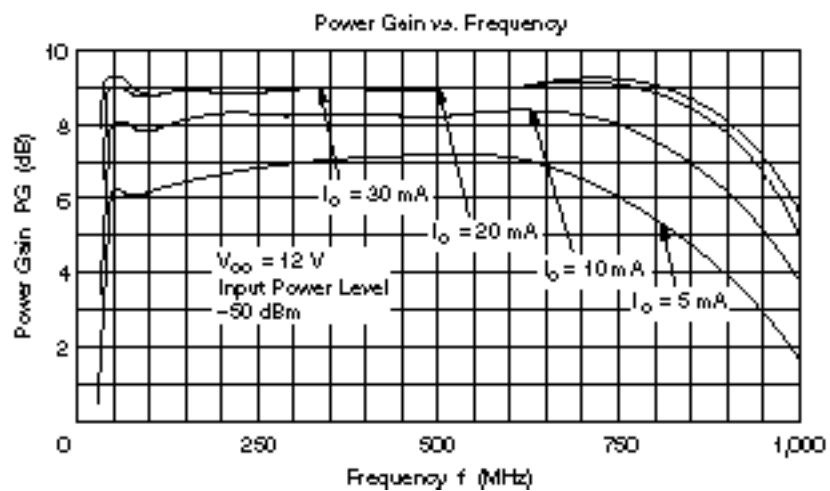
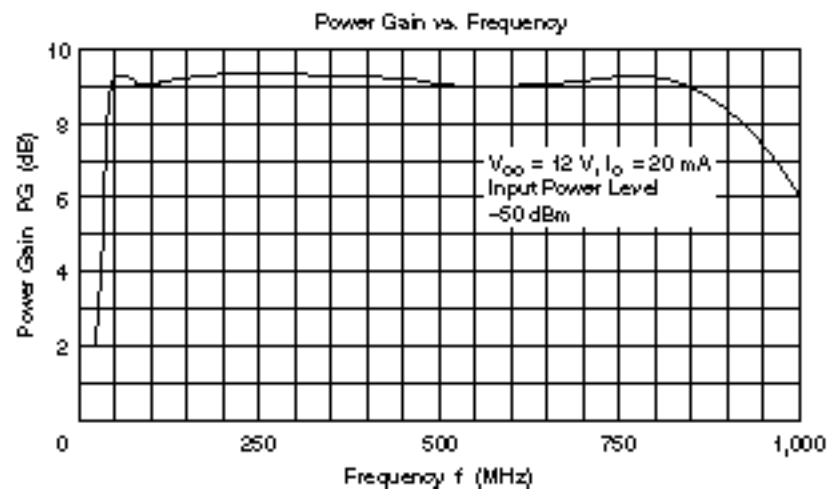


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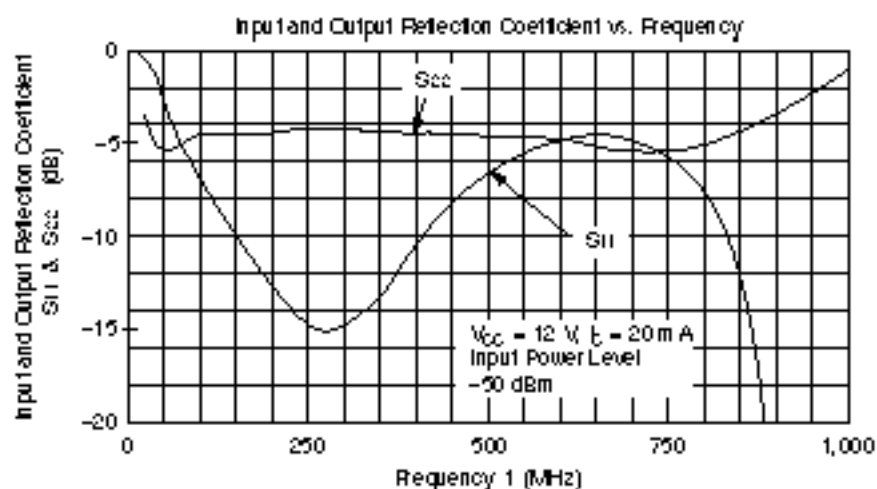




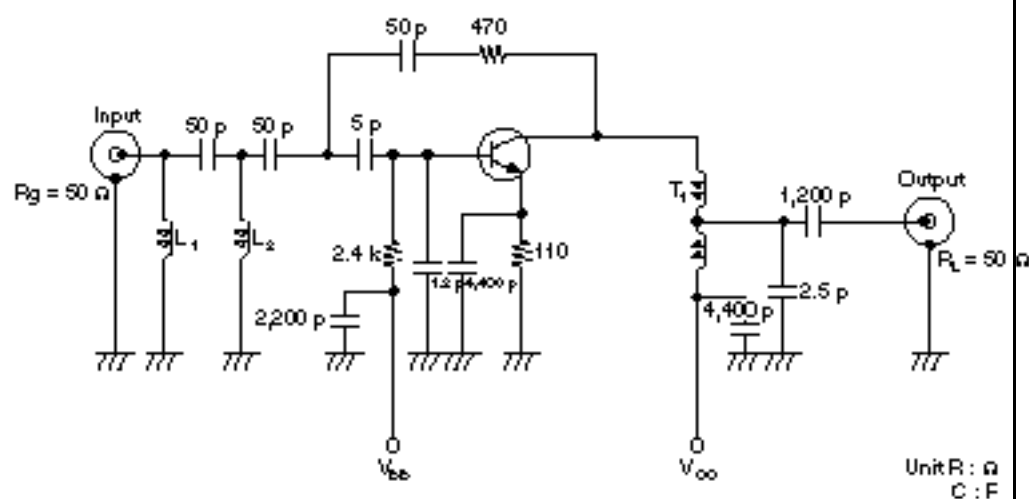
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Vhf to Uhf Wide Band Amp. Circuit



Parts Specification

L_1 : Inside dia $\phi 3.0\text{ mm}$, $\phi 0.4\text{ mm}$ Polyurethane Coated Copper wire 12 Turns.

L_2 : Inside dia $\phi 3.5\text{ mm}$, $\phi 0.5\text{ mm}$ Polyurethane Coated Copper wire 9 Turns.

T_1 : Balance wind used Ferrite Core

Outside dia $\phi 4.0\text{ mm}$, Inside dia $\phi 2.0\text{ mm}$

$\phi 0.1\text{ mm}$ Polyurethane Coated Copper wire 3 Turns.

Ratio Input to Output is 2 : 1

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