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# 2SC3127, 2SC3128, 2SC3510

Silicon NPN Epitaxial

# HITACHI

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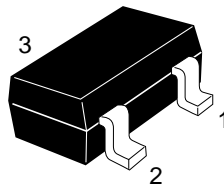
## Application

UHF/VHF wide band amplifier

## Outline

MPAK

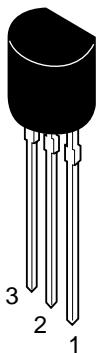
2SC3127



- 1. Emitter
- 2. Base
- 3. Collector

TO-92 (2)

2SC3128, 2SC3510



- 1. Base
- 2. Emitter
- 3. Collector

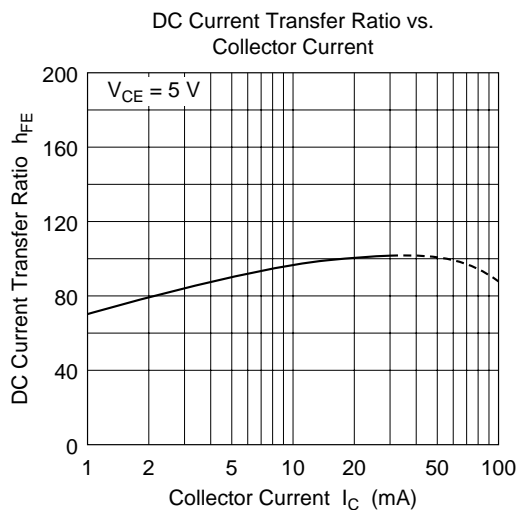
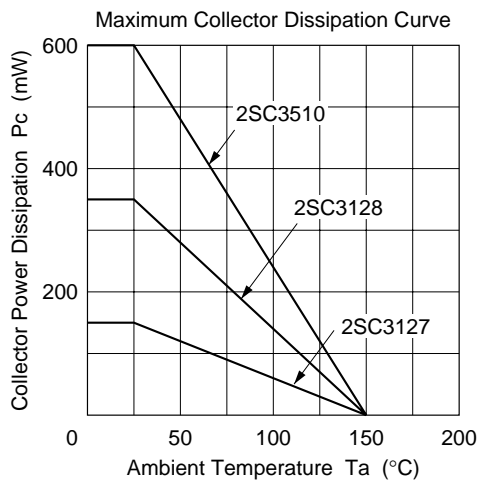
Absolute Maximum Ratings (Ta = 25°C)

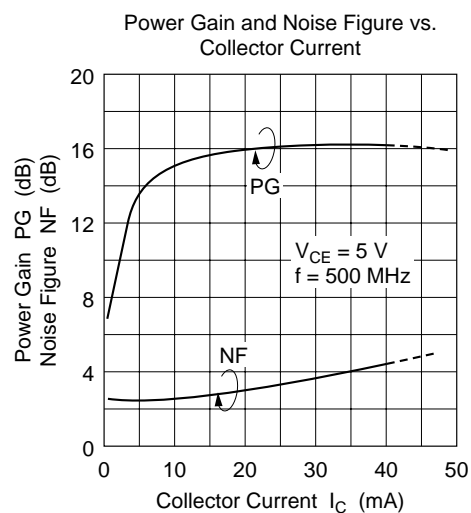
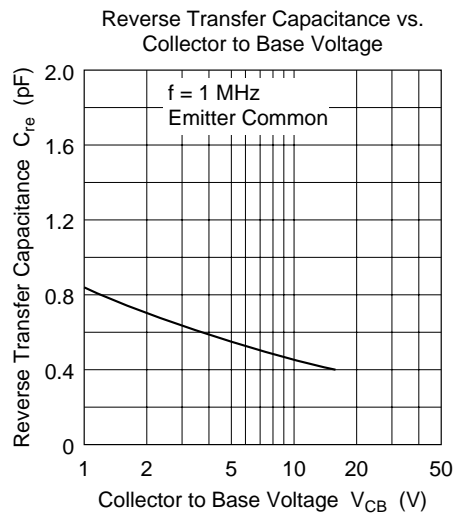
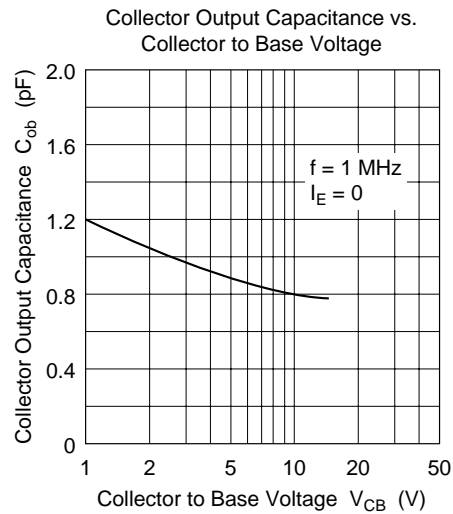
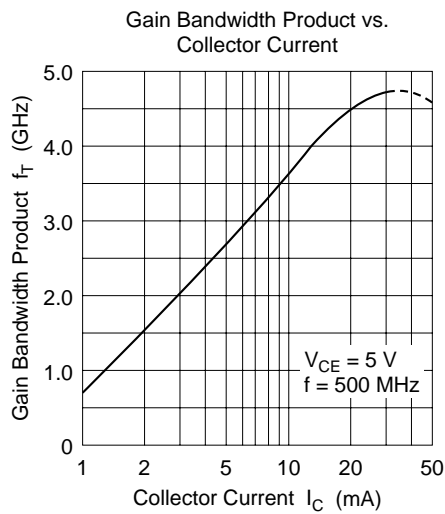
Item	Symbol	2SC3127*1	2SC3128	2SC3510	Unit
Collector to base voltage	$V_{CBO}$	20	20	20	V
Collector to emitter voltage	$V_{CEO}$	12	12	12	V
Emitter to base voltage	$V_{EBO}$	3	3	3	V
Collector current	$I_C$	50	50	50	mA
Collector power dissipation	$P_C$	150	350	600	mW
Junction temperature	$T_j$	150	150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

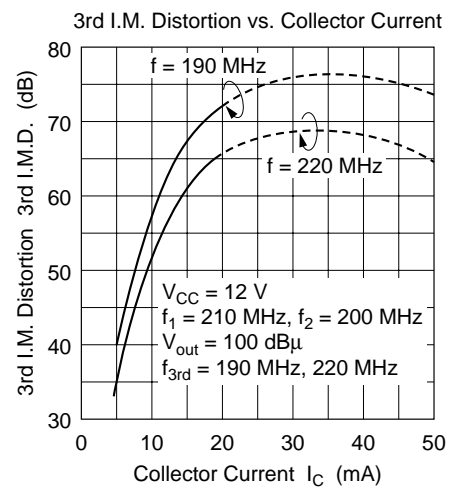
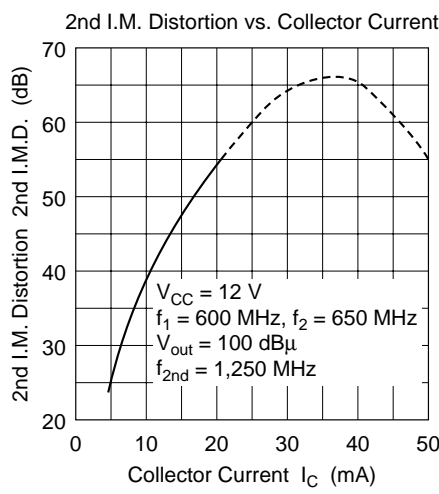
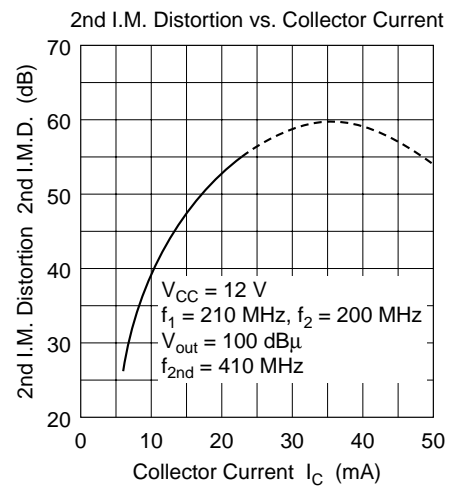
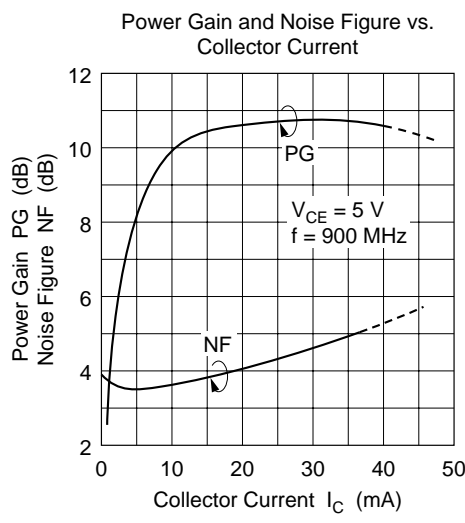
Note: 1. Marking for 2SC3127 is “ID-”.

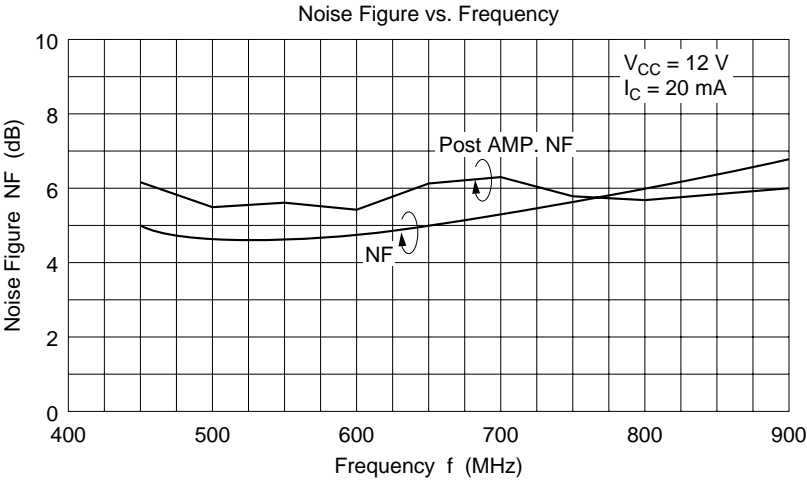
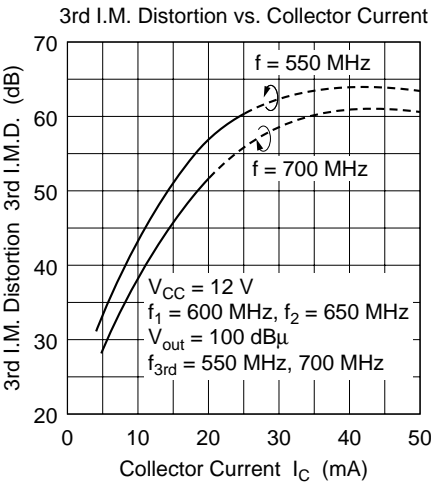
Electrical Characteristics (Ta = 25°C)

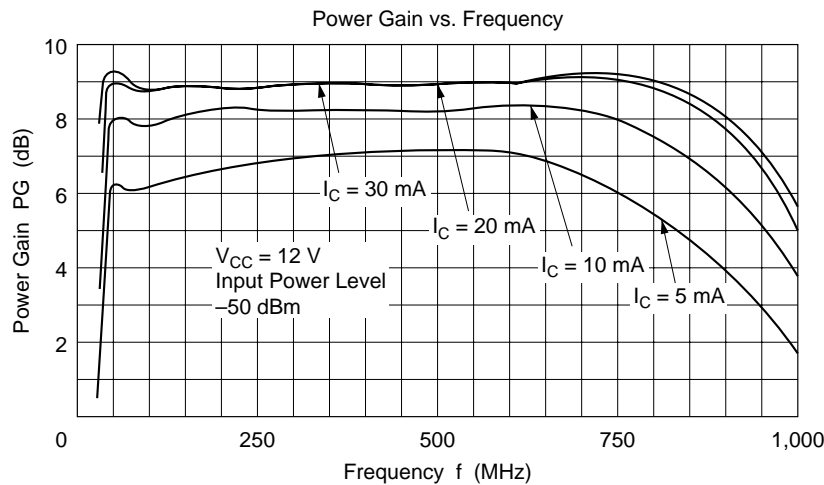
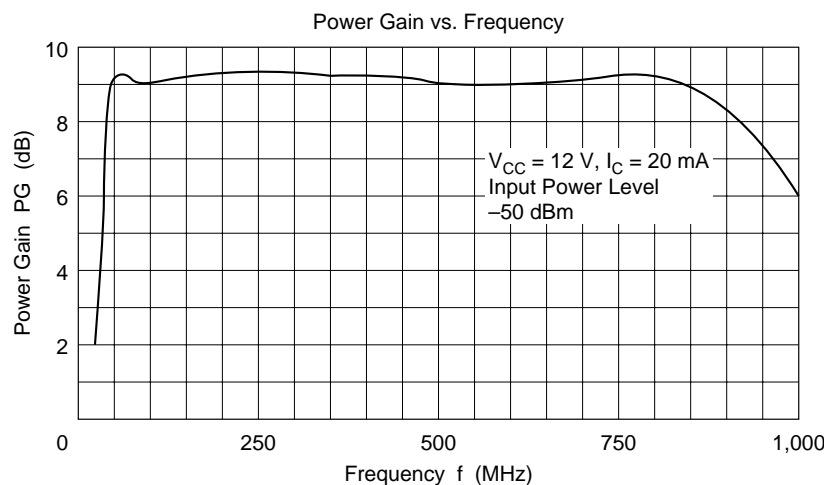
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	20	—	—	V	$I_C = 10\text{ }\mu\text{A}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	12	—	—	V	$I_C = 1\text{ mA}$ , $R_{BE} = \infty$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu\text{A}$	$V_{EB} = 3\text{ V}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu\text{A}$	$V_{CB} = 12\text{ V}$ , $I_E = 0$
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	$V_{CE} = 5\text{ V}$ , $I_C = 5\text{ mA}$ , $f = 900\text{ MHz}$

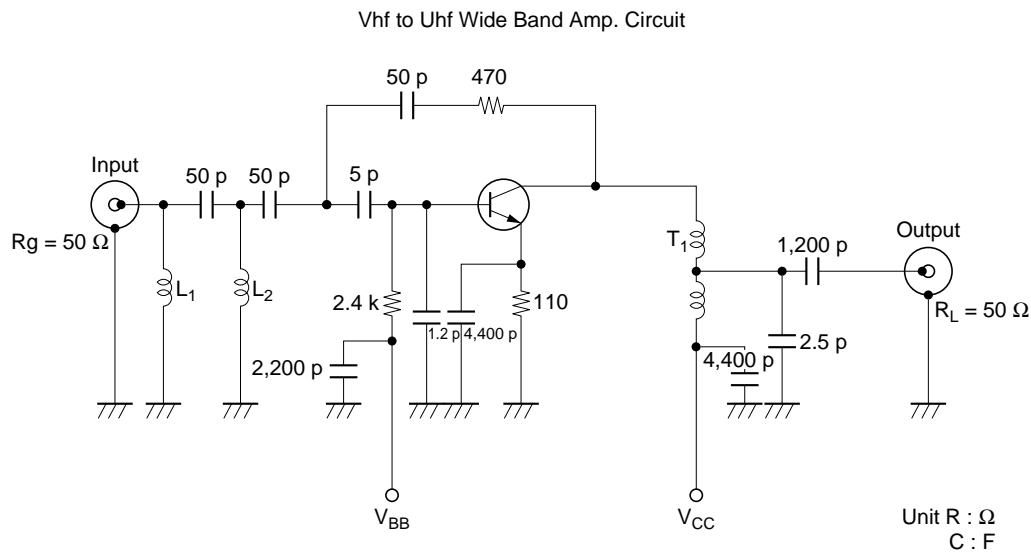
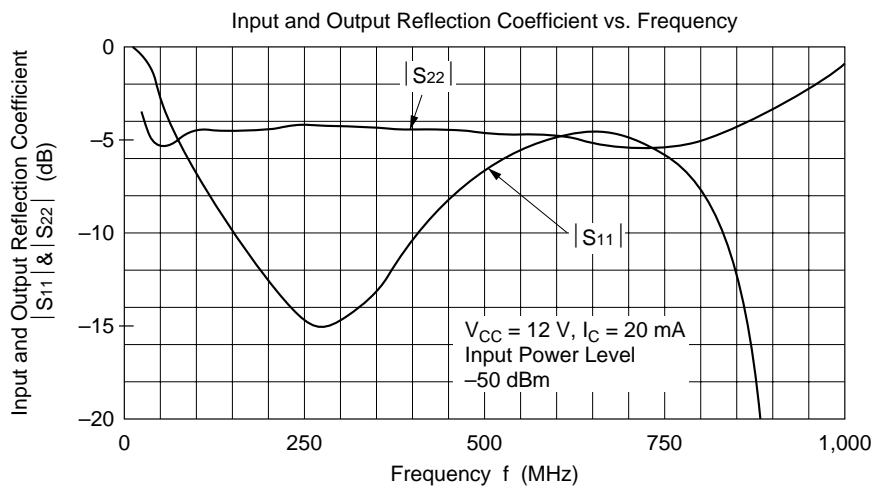












Parts Specification

$L_1$  : 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.

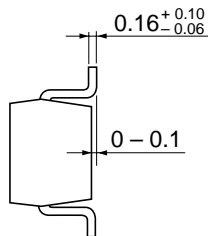
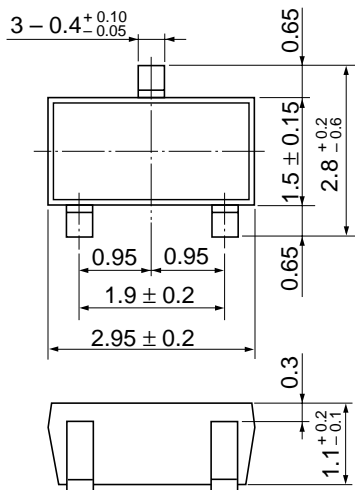
$T_1$  : Balance wind used Ferrite Core

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





Hitachi Code	MPAK
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.011 g

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