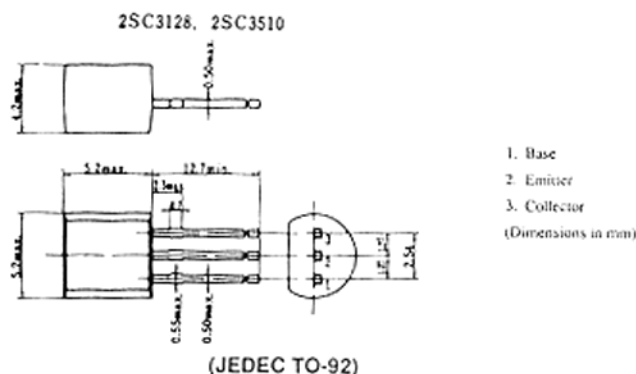
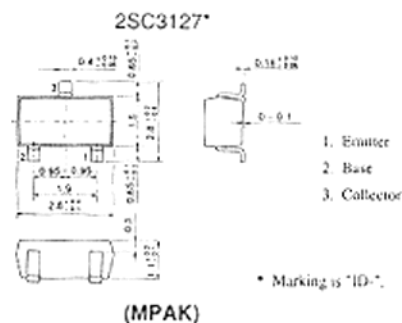


2SC3127 _____
2SC3128, 2SC3510

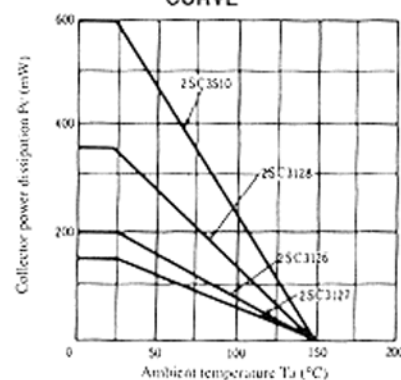
SILICON NPN EPITAXIAL

UHF/VHF WIDE BAND AMPLIFIER

■ ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Item	Symbol	2SC3127*	2SC3128	2SC3510	Unit
Collector to base voltage	V_{CB0}	20	20	20	V
Collector to emitter voltage	V_{CE0}	12	12	12	V
Emitter to base voltage	V_{EB0}	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_{sg}	-55 to +150	-55 to +150	-55 to +150	°C

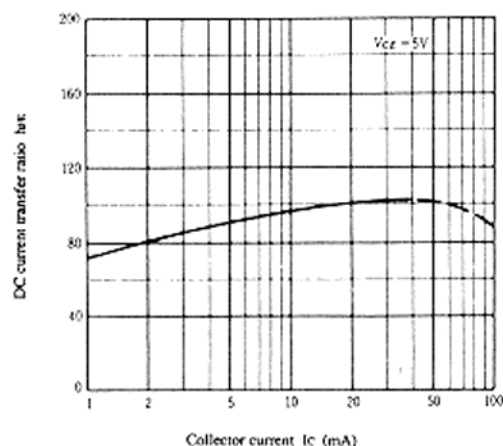
MAXIMUM COLLECTOR DISSIPATION
CURVE



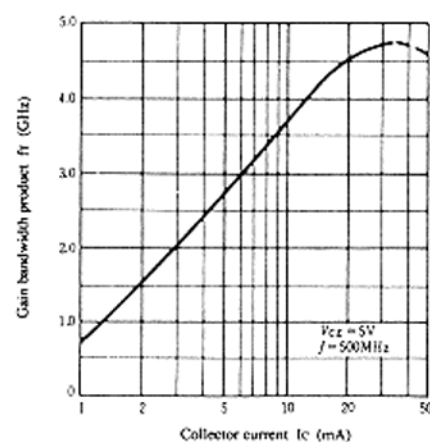
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

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

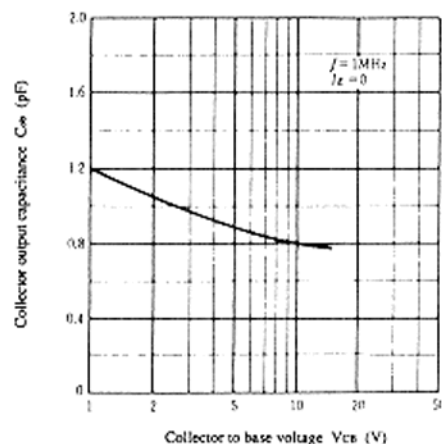
DC CURRENT TRANSFER RATIO
VS. COLLECTOR CURRENT



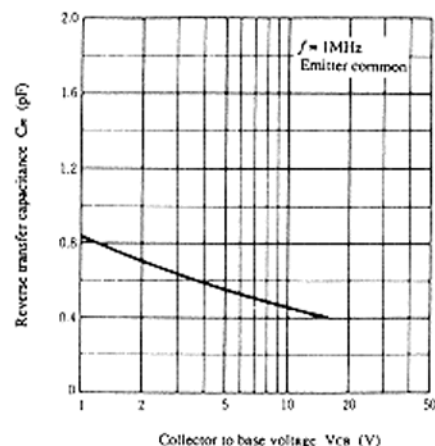
GAIN BANDWIDTH PRODUCT
VS. COLLECTOR CURRENT



COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE

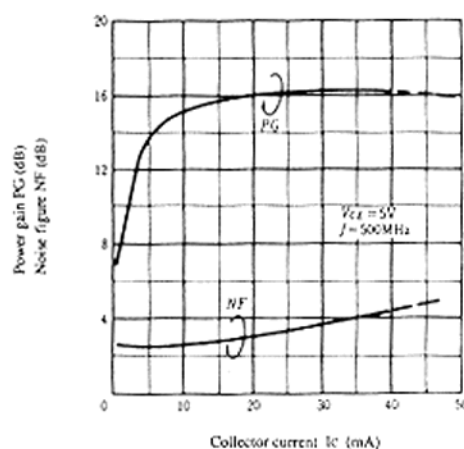


REVERSE TRANSFER CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE

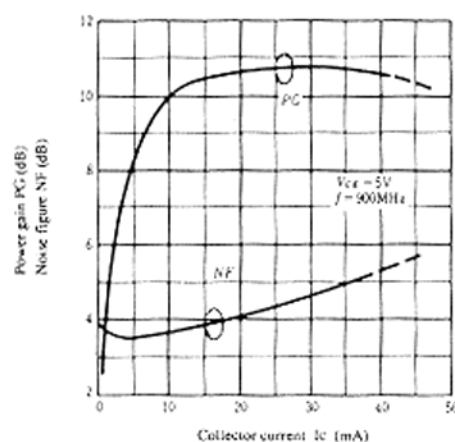


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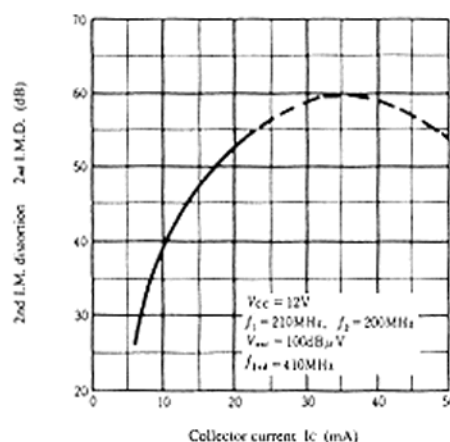
POWER GAIN AND NOISE FIGURE
VS. COLLECTOR CURRENT



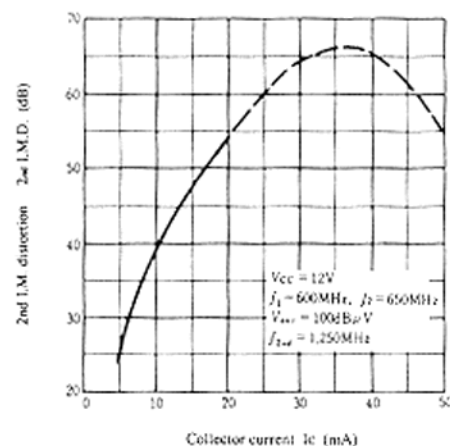
POWER GAIN AND NOISE FIGURE
VS. COLLECTOR CURRENT



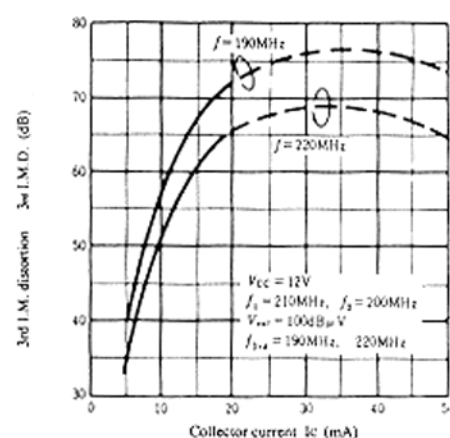
2ND I.M. DISTORTION
VS. COLLECTOR CURRENT



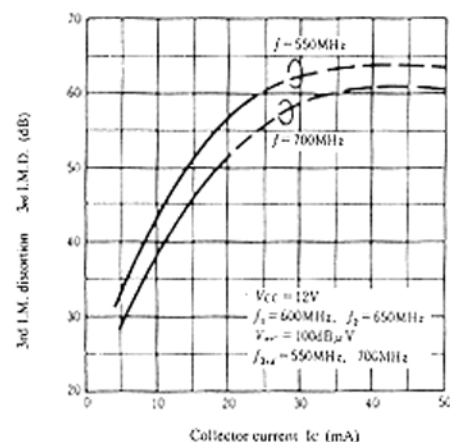
2ND I.M. DISTORTION
VS. COLLECTOR CURRENT



3RD I.M. DISTORTION
VS. COLLECTOR CURRENT

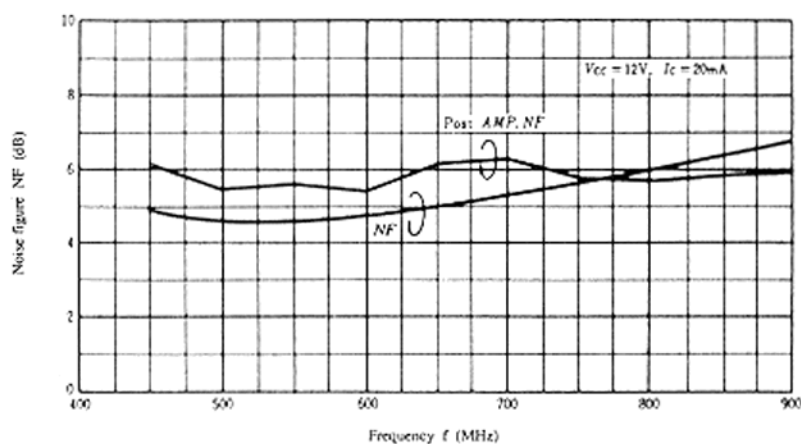


3RD I.M. DISTORTION
VS. COLLECTOR CURRENT

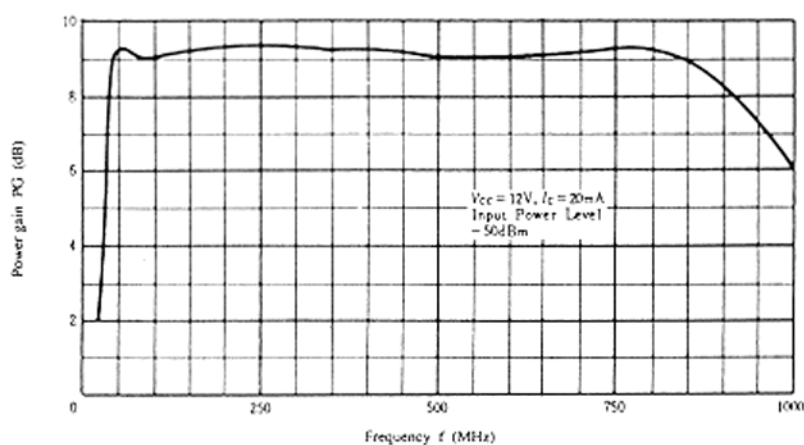


2SC3127, 2SC3128, 2SC3510

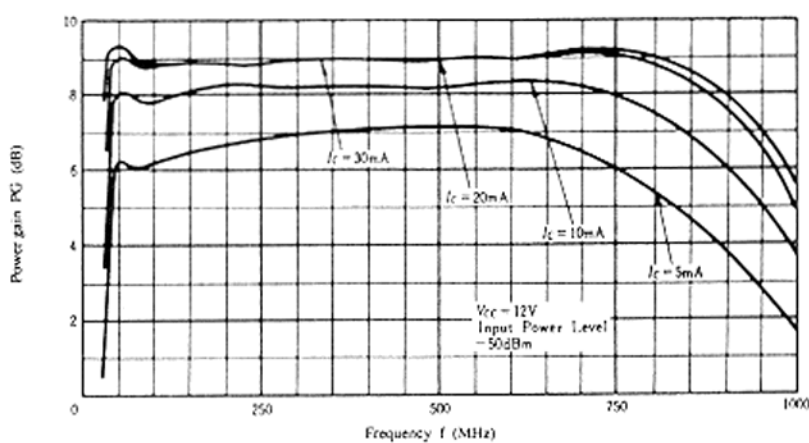
NOISE FIGURE VS. FREQUENCY



POWER GAIN VS. FREQUENCY

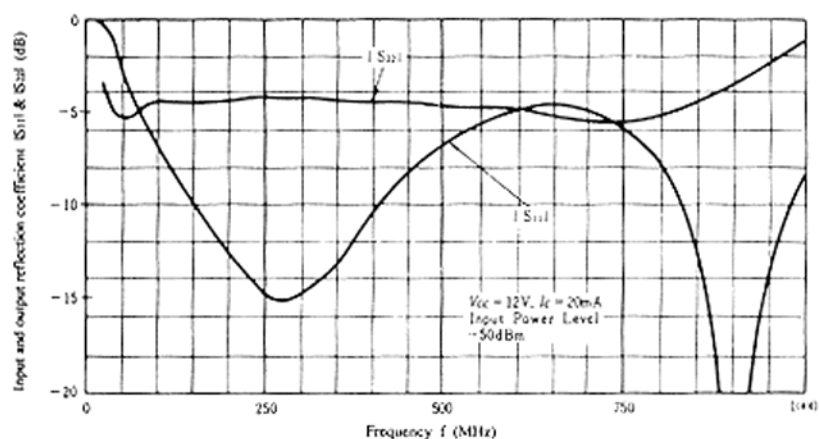


POWER GAIN VS. FREQUENCY

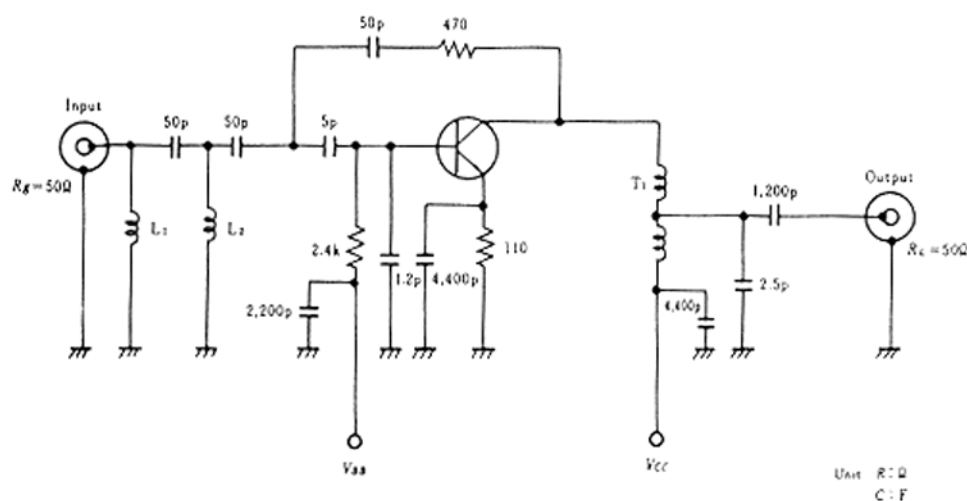


2SC3127, 2SC3128, 2SC3510

INPUT AND OUTPUT REFLECTION COEFFICIENT VS. FREQUENCY



VHF to UHF WIDE BAND AMP. CIRCUIT



Parts Specification

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

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

T_1 : Balance wind used Ferrite Core

Outside dia $\phi 4.0mm$, Inside dia $\phi 2.0mm$

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

Ratio Input to Output is 2 : 1