HA1201 HA1211

FM IF AMPLIFIER

Hitachi HA1201 and HA1211 are silicon monolithic integrated circuit designed for FM-IF Amplifiers.

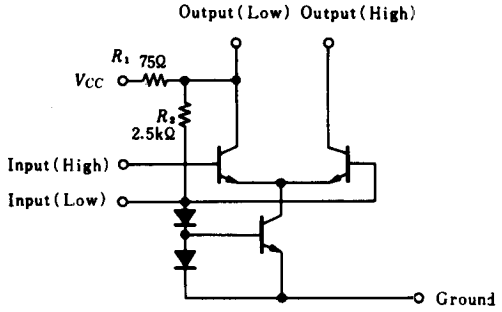
It features the capability of nonsaturating limiter operation with a suitable output load, rendering it ideally adaptable to FM-IF limiter application.

Applications include FM-IF limiter amplifiers, TV sound IF amplifiers, and chroma reference oscillators for color TV.

HA1201 **HA1211**

(DP-8) (SP-8-A)

■ CIRCUIT SCHEMATIC



■ PIN ARRANGEMENT

Function	HA1201	HA1211
V_{CC}	⑥	①
Input (High)	②	④
Input (Low)	④	⑤
Output (High)	⑤	⑦
Output (Low)	⑦	⑧
Ground	③	⑥

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

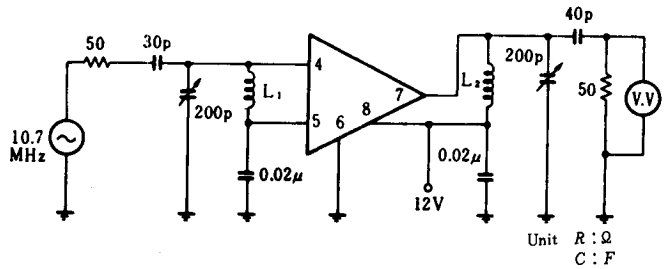
Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	20	V
Input Voltage	V_{in}	±5	V
Power Dissipation	P_T	200	mW
Operating Temperature	T_{opr}	−20 to +70	°C
Storage Temperature	T_{stg}	−55 to +125	°C

■ ELECTRICAL CHARACTERISTICS (V_{CC}=12V, Ta=25°C)

Item	Symbol	Test Condition	min	typ	max	Unit
Power Dissipation	P_T		—	110	170	mW
DC Total Current	I_T		5.4	9.15	14.1	mA
Power Gain	PG	f=10.7MHz	27	31	—	dB
Forward Transadmittance	$\|y_f\|$	V_{in}=10mVrms, f=10.7MHz	—	30	—	mS
Reverse Transadmittance	$\|y_r\|$		—	0.002	—	mS
Input Conductance	g_i		—	0.4	—	mS
Input Capacitance	C_i		—	7.0	—	pF
Output Conductance	g_o		—	0.03	—	mS
Output Capacitance	C_o		—	2.5	—	pF
Noise Figure	NF	f=10.7MHz	—	6	—	dB

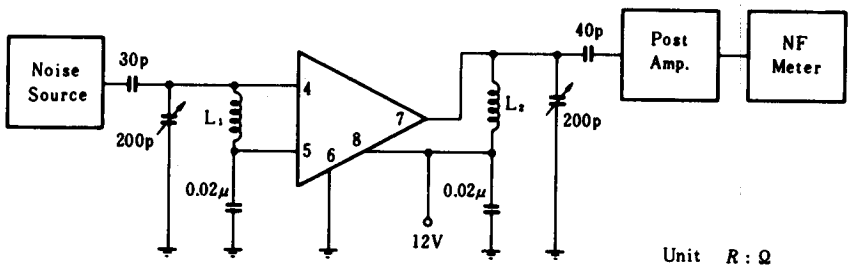
■ TEST CIRCUIT (Pin Arrangement: HA1211)

1. PG



L_1: 0.3φ Polyuletan wire 6.2T
0.67μH
L_2: 0.3φ Polyuletan wire 8T
0.83μH
V. V:HP3406A or its equivalent

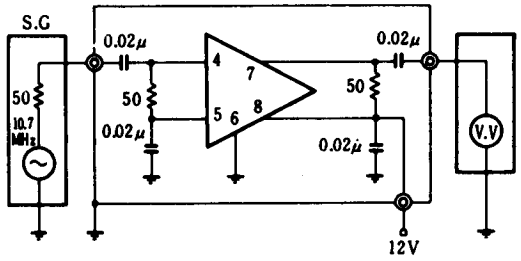
2. NF



Unit R : Ω
C : F

L_1 : 0.3φ Polyuletan wire 6.2T 0.67μH
L_2 : 0.3φ Polyuletan wire 8T 0.83μH

3. $|y_f|$

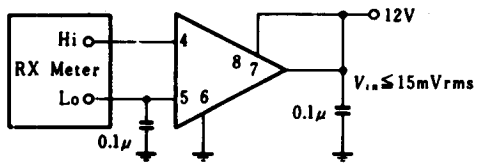


V.V : HP3406A or its Equivalent

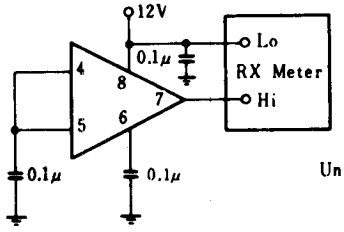
Unit C : F
R : Ω

Test the Vout at V_{in} = 10mV and calculate the $|y_f|$ using the following equation.
$|y_f| = 2$ Vout (mV)

4. Rin, Cin

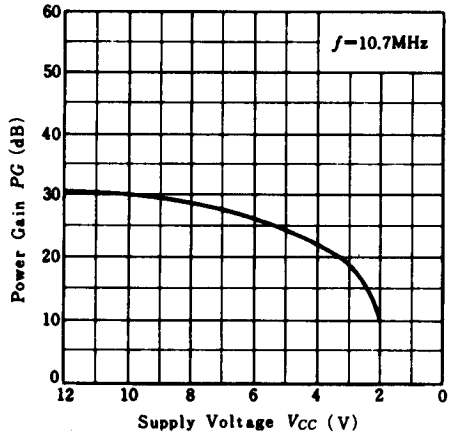


5. Rout, Cout

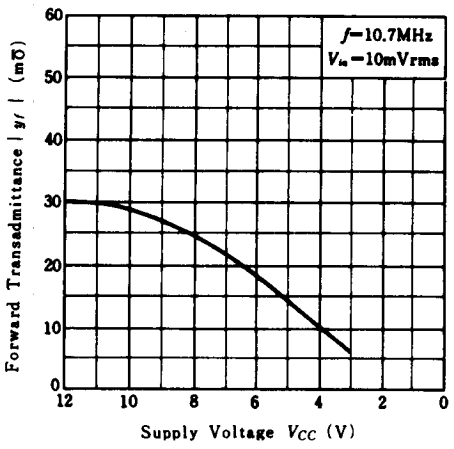


Unit C : F

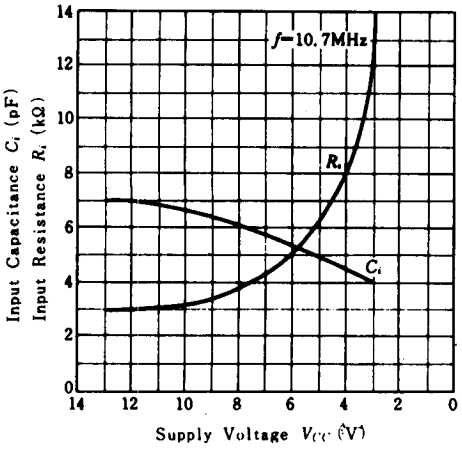
POWER GAIN VS. SUPPLY VOLTAGE



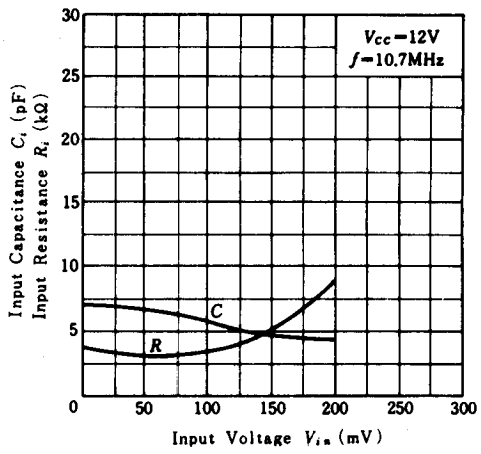
FORWARD TRANSADMITTANCE VS. SUPPLY VOLTAGE



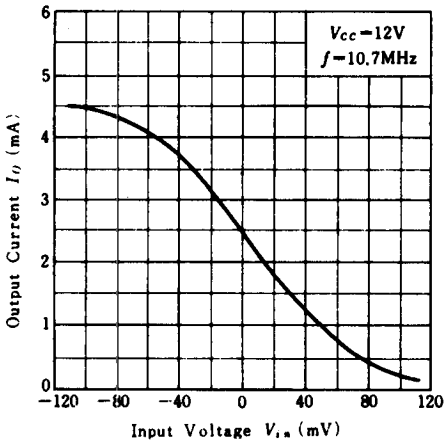
INPUT RESISTANCE AND INPUT CAPACITANCE VS. SUPPLY VOLTAGE



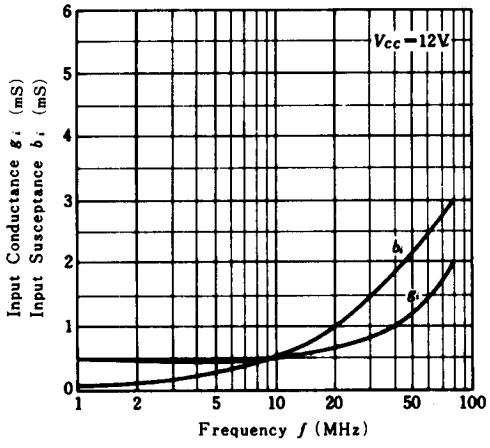
INPUT RESISTANCE AND INPUT CAPACITANCE VS. INPUT VOLTAGE



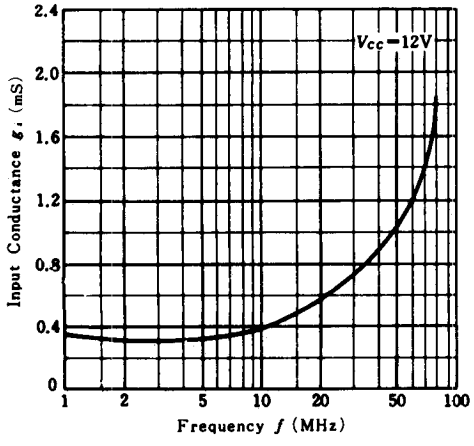
OUTPUT CURRENT VS. INPUT VOLTAGE



INPUT ADMITTANCE VS. FREQUENCY



INPUT CONDUCTANCE VS. FREQUENCY



REVERSE TRANSADMITTANCE VS. FREQUENCY