

# HA1201 HA1211

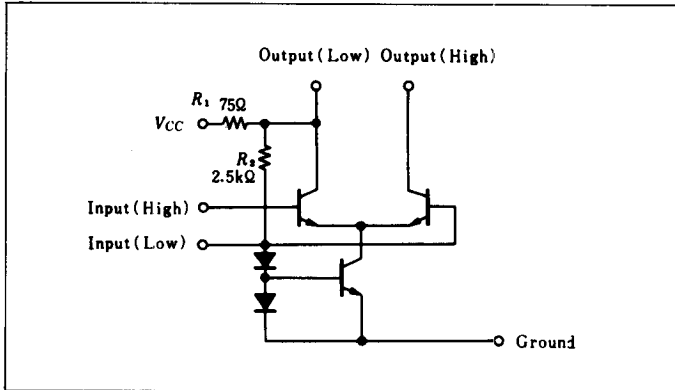
## FM IF AMPLIFIER

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.

### ■ CIRCUIT SCHEMATIC



HA1201

HA1211



(DP-8)



(SP-8-A)

### ■ PIN ARRANGEMENT

Function	HA1201	HA1211
V <sub>cc</sub>	⑥	①
Input (High)	②	④
Input (Low)	④	⑤
Output (High)	⑤	⑦
Output (Low)	⑦	⑧
Ground	③	⑥

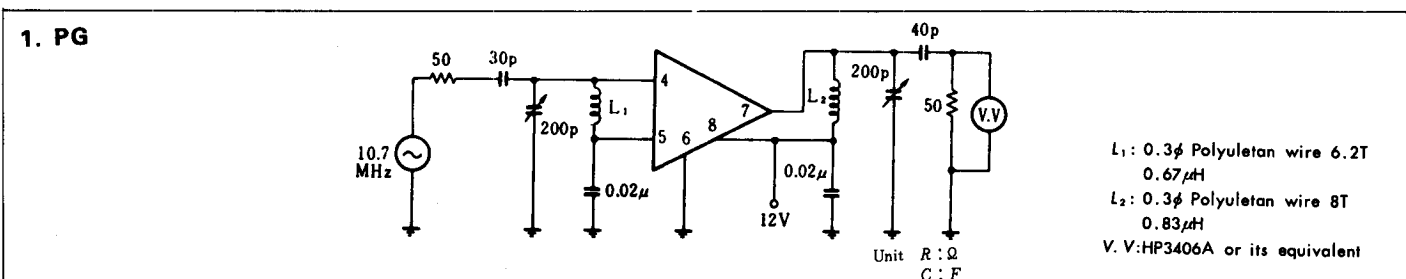
### ■ ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25°C)

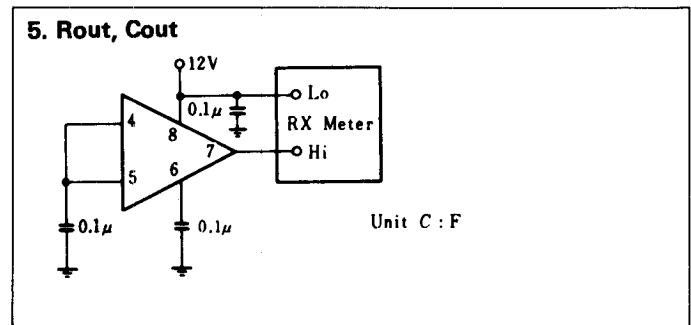
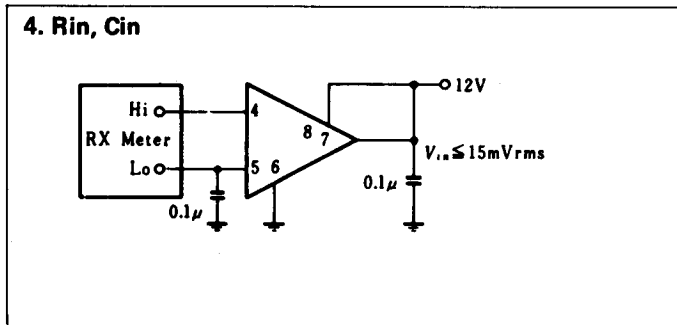
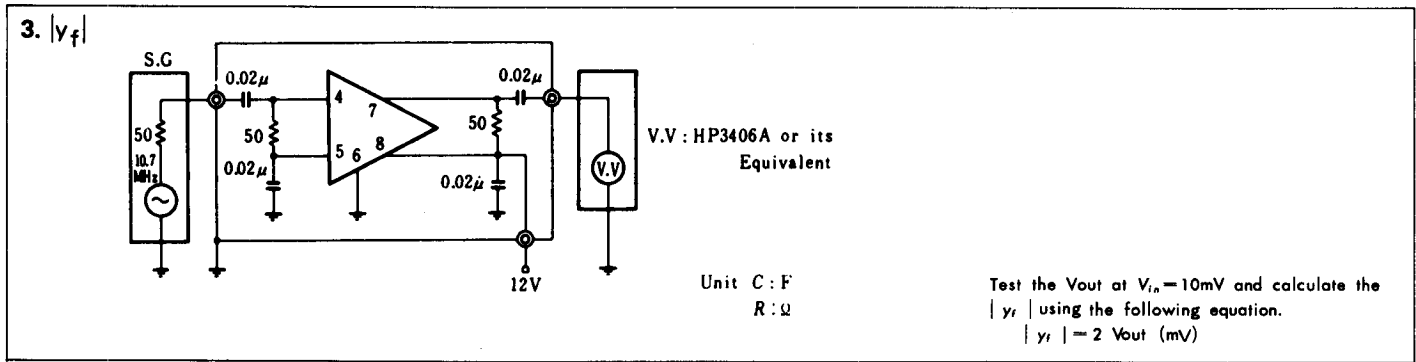
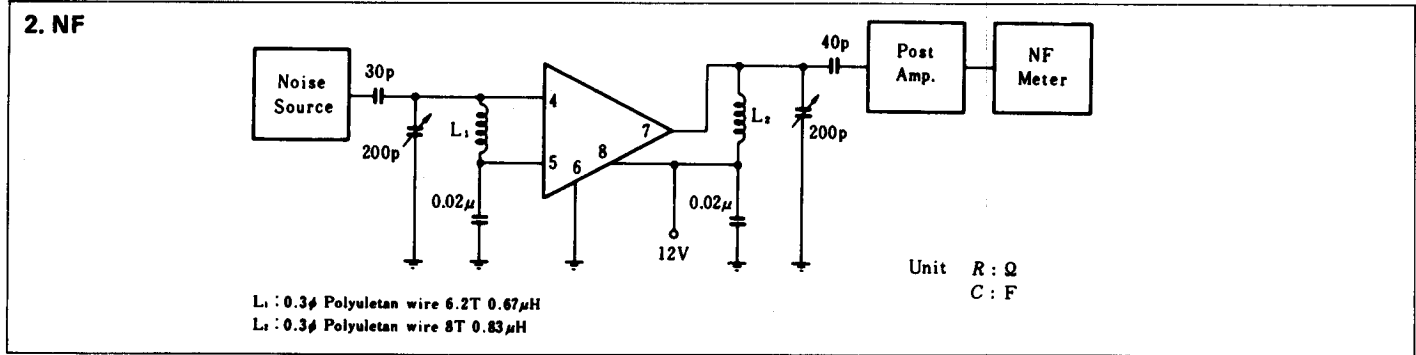
Item	Symbol	Rating	Unit
Supply Voltage	V <sub>cc</sub>	20	V
Input Voltage	V <sub>in</sub>	±5	V
Power Dissipation	P <sub>r</sub>	200	mW
Operating Temperature	T <sub>opr</sub>	-20 to +70	°C
Storage Temperature	T <sub>stg</sub>	-55 to +125	°C

### ■ ELECTRICAL CHARACTERISTICS (V<sub>cc</sub> = 12V, T<sub>a</sub> = 25°C)

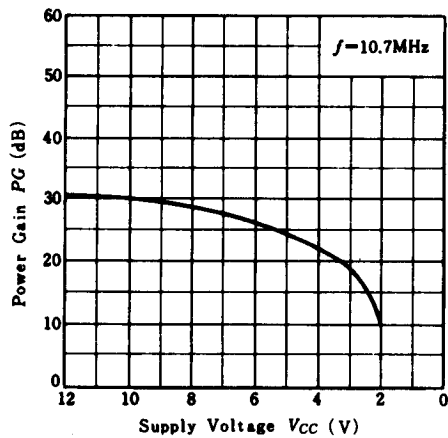
Item	Symbol	Test Condition	min	typ	max	Unit
Power Dissipation	P <sub>r</sub>		—	110	170	mW
DC Total Current	I <sub>r</sub>		5.4	9.15	14.1	mA
Power Gain	PG	f = 10.7MHz	27	31	—	dB
Forward Transadmittance	y <sub>f</sub>	V <sub>in</sub> = 10mVrms, f = 10.7MHz	—	30	—	mS
Reverse Transadmittance	y <sub>r</sub>		—	0.002	—	mS
Input Conductance	g <sub>i</sub>		—	0.4	—	mS
Input Capacitance	C <sub>i</sub>		—	7.0	—	pF
Output Conductance	g <sub>o</sub>		—	0.03	—	mS
Output Capacitance	C <sub>o</sub>		—	2.5	—	pF
Noise Figure	NF		f = 10.7MHz	—	6	—

### ■ TEST CIRCUIT (Pin Arrangement: HA1211)

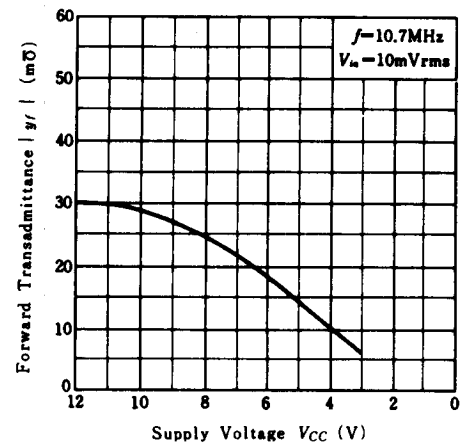




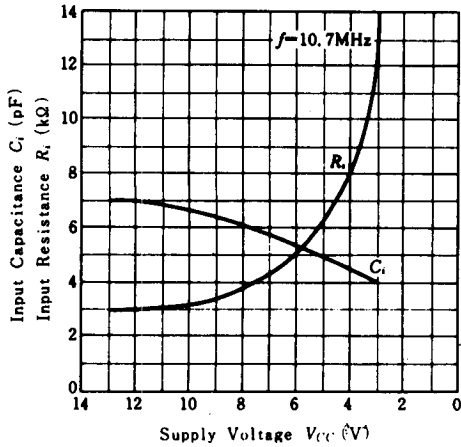
POWER GAIN VS. SUPPLY VOLTAGE



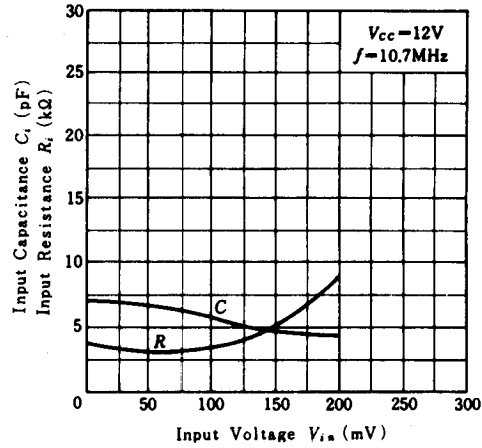
FORWARD TRANSMITTANCE VS. SUPPLY VOLTAGE



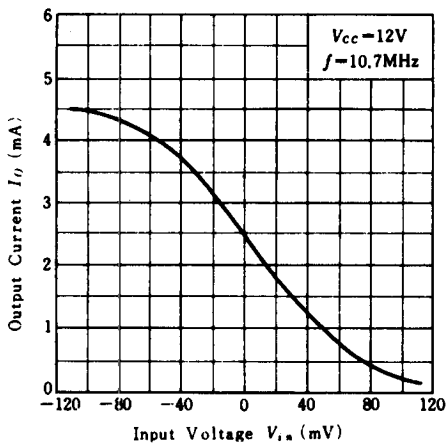
**INPUT RESISTANCE AND INPUT CAPACITANCE VS. SUPPLY VOLTAGE**



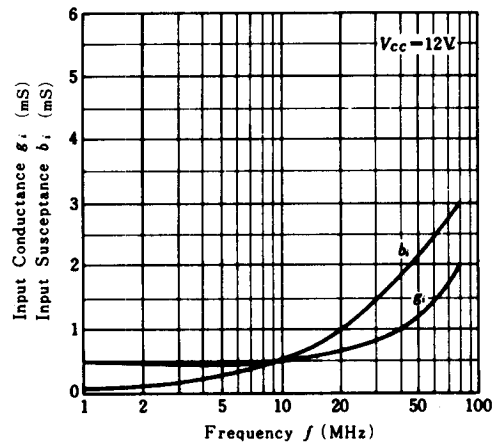
**INPUT RESISTANCE AND INPUT CAPACITANCE VS. INPUT VOLTAGE**



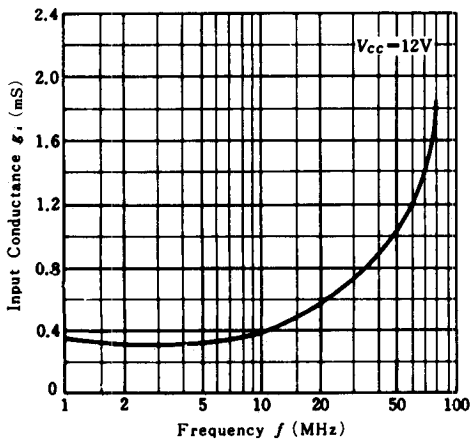
**OUTPUT CURRENT VS. INPUT VOLTAGE**



**INPUT ADMITTANCE VS. FREQUENCY**



**INPUT CONDUCTANCE VS. FREQUENCY**



**REVERSE TRANSADMITTANCE VS. FREQUENCY**

