

### FEATURES

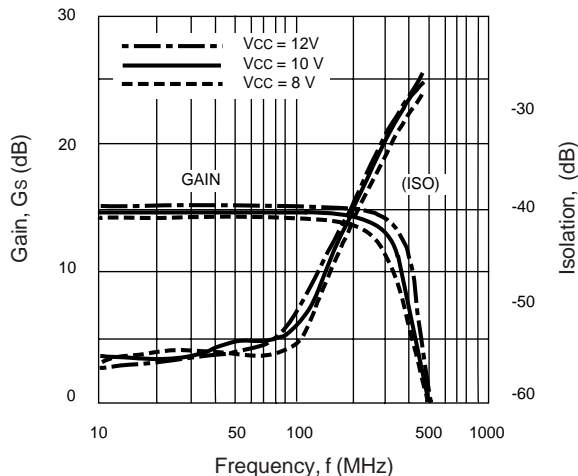
- HIGH ISOLATION
- LOW INPUT/OUTPUT RETURN LOSS
- LOW INTERMODULATION DISTORTION

### DESCRIPTION

The UPC1668C is a bipolar analog integrated circuit which functions as a high isolation IF amplifier. The device has been specifically designed as an IF amplifier for video communications. The device is available in a plastic DIP package.

NEC's stringent quality assurance and test procedures ensure the highest reliability and performance.

UPC1668C  
ISOLATION AND GAIN  
vs. FREQUENCY



### ELECTRICAL CHARACTERISTICS (TA = 25°C, Zo = 75 Ω, Vcc = 10 V, f = 70 MHz)

PART NUMBER PACKAGE OUTLINE			UPC1668C C08		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I <sub>CC</sub>	Circuit Current	mA	35	48	60
G <sub>s</sub>	Small Signal Gain	dB	12.5	14.5	16.0
P <sub>1dB</sub>	Output Power at 1 dB Gain Compression	dBm		13	
NF	Noise Figure	dB		6.5	
RL <sub>IN</sub>	Input Return Loss	dB	16	26	
RL <sub>OUT</sub>	Output Return Loss	dB	20	30	
ISOL	Isolation	dB	45	55	
IM <sub>3</sub>	3rd Order Intermodulation, P <sub>O1</sub> = P <sub>O2</sub> = 0 dBm	dBc		50	
f <sub>OP</sub>	Operating Frequency	MHz	10		150

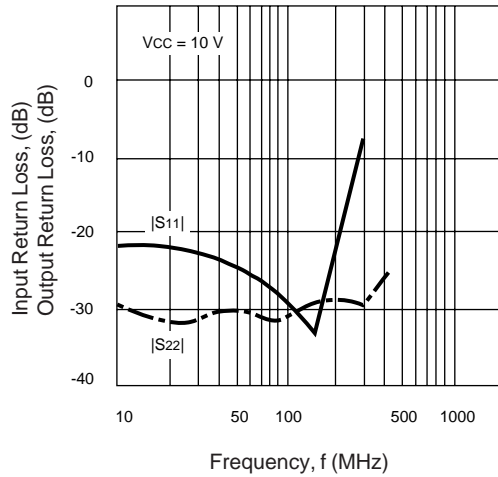
**ABSOLUTE MAXIMUM RATINGS<sup>1</sup>** (T<sub>A</sub> = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V <sub>CC</sub>	Power Supply Voltage	V	12
P <sub>T</sub>	Total Power Dissipation <sup>2</sup>	mW	750
P <sub>IN</sub>	Input Power	dBm	+15
T <sub>OP</sub>	Operating Temperature	°C	-45 to +85
T <sub>STG</sub>	Storage Temperature	°C	-55 to +150

Notes:

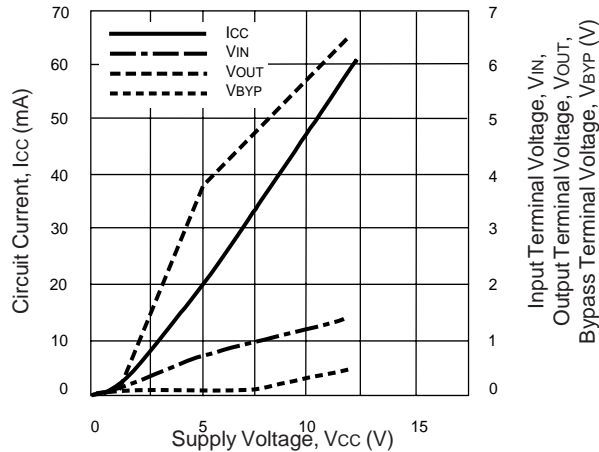
1. Operation in excess of any one of these parameters may result in permanent damage.
2. At T<sub>A</sub> = +85°C.

**UPC1668C  
INPUT RETURN LOSS, OUTPUT  
RETURN LOSS vs. FREQUENCY**

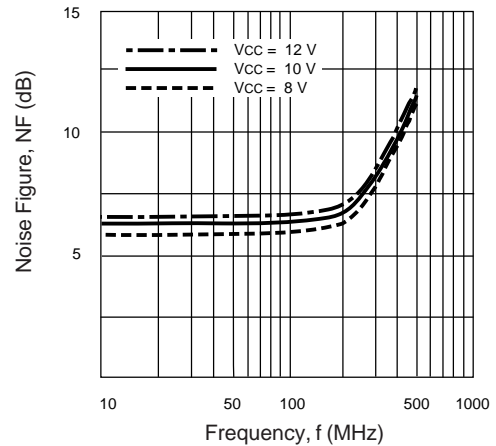


**TYPICAL PERFORMANCE CURVES** (T<sub>A</sub> = 25°C)

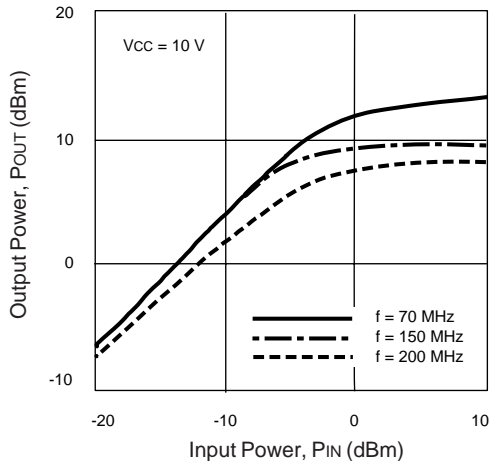
**CIRCUIT CURRENT, INPUT  
TERMINAL VOLTAGE, OUTPUT  
TERMINAL VOLTAGE, BYPASS TERMINAL  
VOLTAGE vs. SUPPLY VOLTAGE**



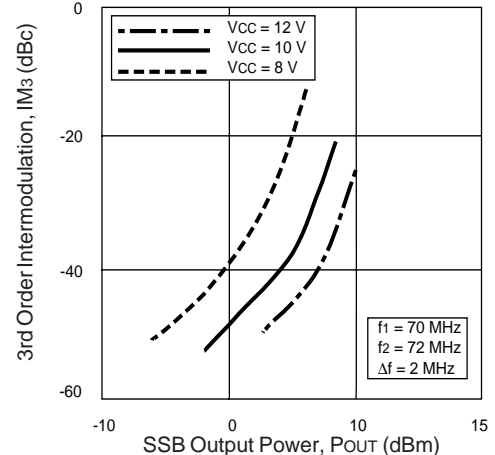
**NOISE FIGURE vs. FREQUENCY**



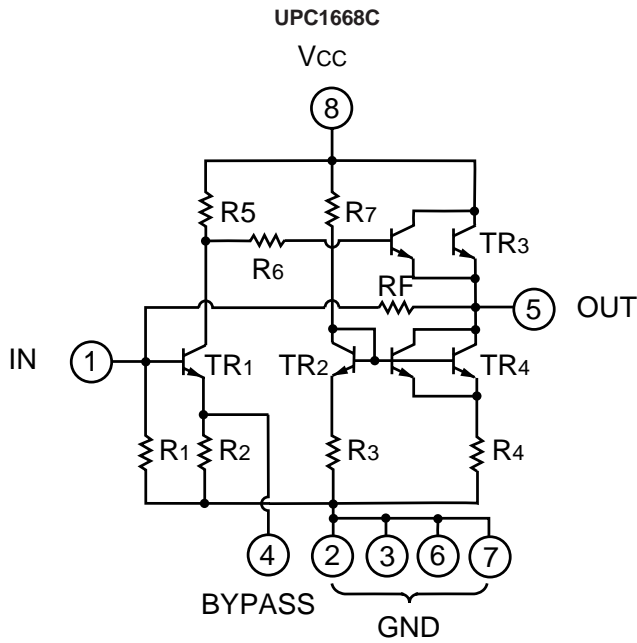
**OUTPUT POWER vs. INPUT POWER**



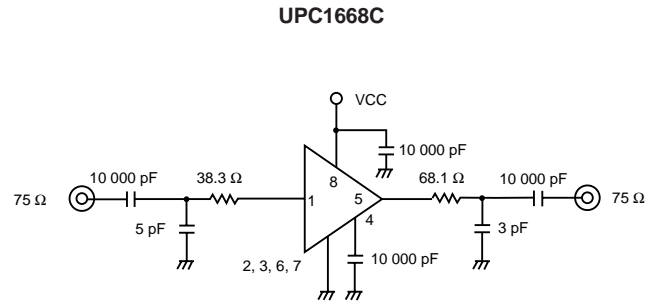
**THIRD ORDER INTERMODULATION  
vs. OUTPUT POWER**



**SCHEMATIC DIAGRAM**

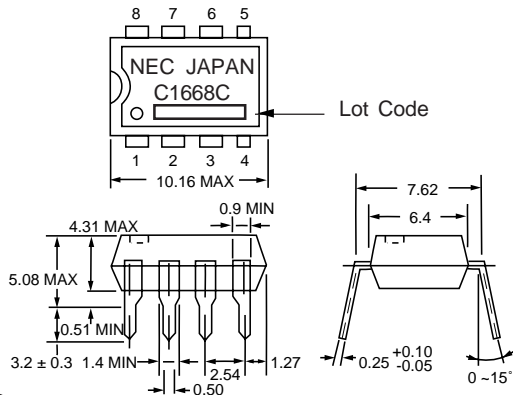


**TEST CIRCUIT DIAGRAM** (70 MHz Recommended Circuit)



**OUTLINE DIMENSIONS** (Units in mm)

UPC1668C  
PACKAGE OUTLINE C08



**LEAD CONNECTIONS**

- 1. Input
- 2, 3, 6, 7. GND
- 4. Bypass
- 5. Output
- 8. Vcc

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