

FEATURES

- HIGH OUTPUT POWER : +18 dBm
- EXCELLENT FREQUENCY RESPONSE:
1.9 GHz TYP at 3 dB Down
- HIGH POWER GAIN: 23 dB TYP at 0.5 GHz
- SINGLE SUPPLY VOLTAGE: 5 V

DESCRIPTION AND APPLICATIONS

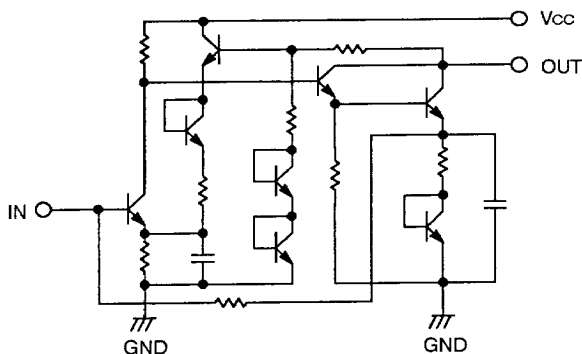
The UPC1678 is a silicon monolithic integrated circuit designed as a wide-band amplifier covering the HF to UHF bands. The device features high output power, 18 dBm TYP, high gain, 23 dB TYP and operates from a single 5 volt supply. The UPC1678 is available in two package styles: an 8 lead ceramic flat pack (UPC1678B), and an 8 pin mini flat (UPC1678G).

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{CC}	Supply Voltage	V	-0.5 to 6.0
P _T	Total Power Dissipation UPC1678B UPC1678G	W mW	1.5 (T _C = +125°C) 330*
T _{OP}	Operating Temperature UPC1678B UPC1678G	°C °C	-55 to +125 -45 to +85
T _{STG}	Storage Temperature UPC1678B UPC1678G	°C °C	-65 to +200 -55 to +150

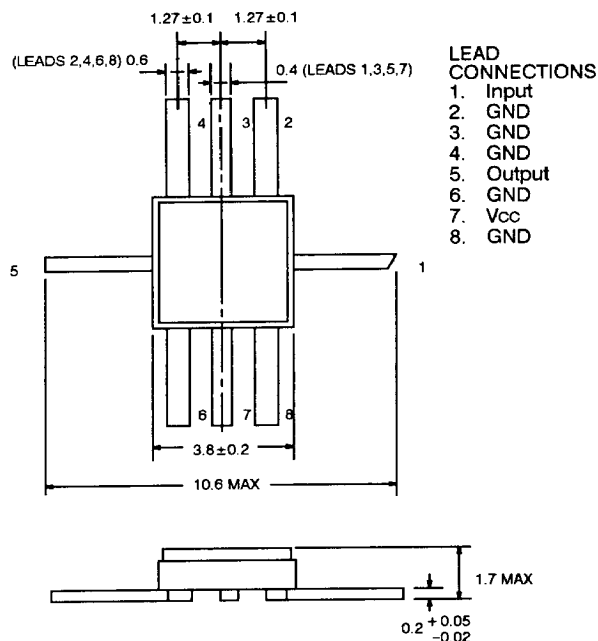
*Mounted on 5 cm x 5 cm x 1.6 mm glass epoxy PWB.

EQUIVALENT CIRCUIT

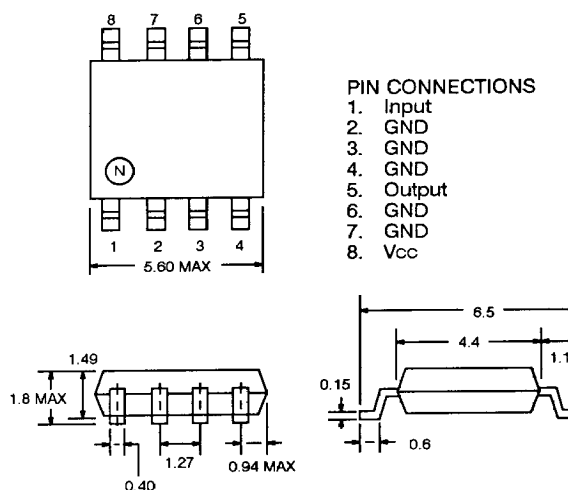


OUTLINE DIMENSIONS (Units in mm)

OUTLINE B08

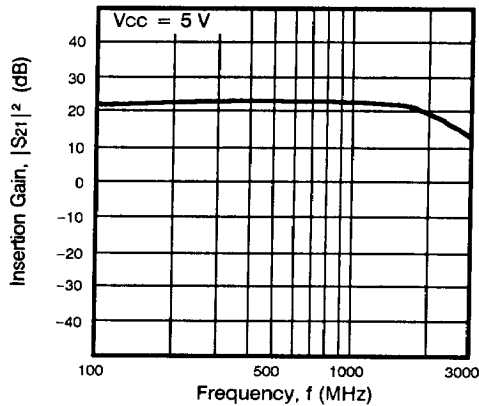
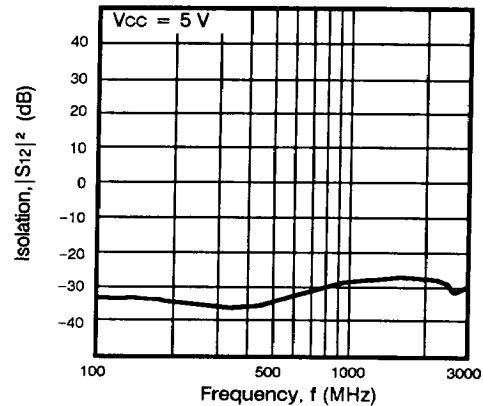
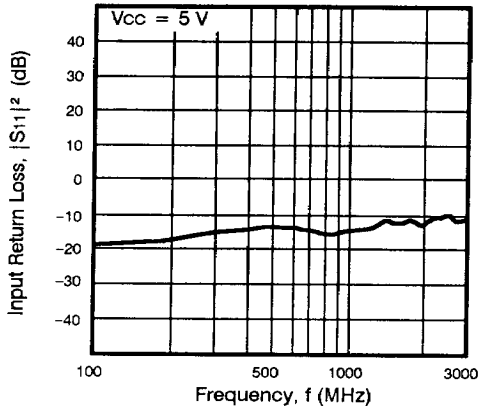
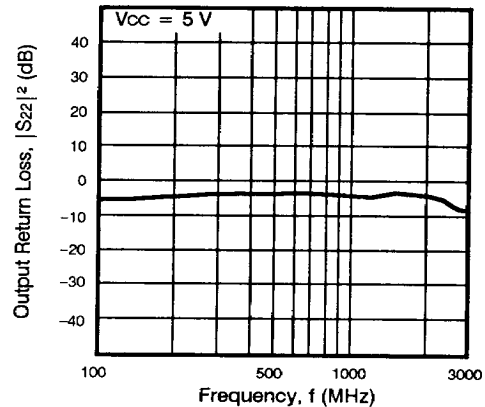


OUTLINE G08



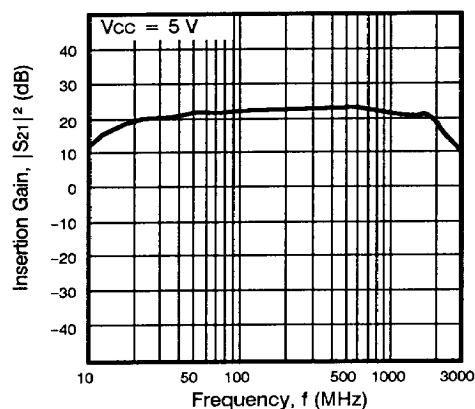
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $V_{CC} = 5\text{ V}$)

PART NUMBER PACKAGE OUTLINE			UPC1678B, UPC1678G B08, G08		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I_{CC}	Circuit Current at No Input Signal	mA		48	
GP	Power Gain at $f = 0.5\text{ GHz}$	dB		23	
NF	Noise Figure at $f = 0.5\text{ GHz}$	dB		6	
BW	Bandwidth at 3 dB Down	GHz		1.9	
ISL	Isolation at $f = 0.5\text{ GHz}$	dB		34	
RLIN	Input Return Loss at $f = 0.5\text{ GHz}$	dB		13	
RLOUT	Output Return Loss at $f = 0.5\text{ GHz}$	dB		4	
POUT	Power Output at $f = 0.5\text{ GHz}$	dBm		+18	

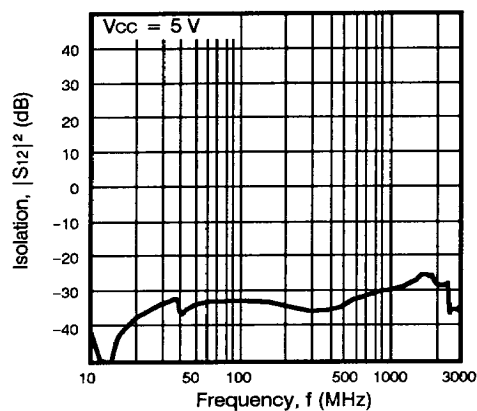
TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = 25^\circ\text{C}$)**INSERTION GAIN vs. FREQUENCY****ISOLATION vs. FREQUENCY****INPUT RETURN LOSS vs. FREQUENCY****OUTPUT RETURN LOSS vs. FREQUENCY**

TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

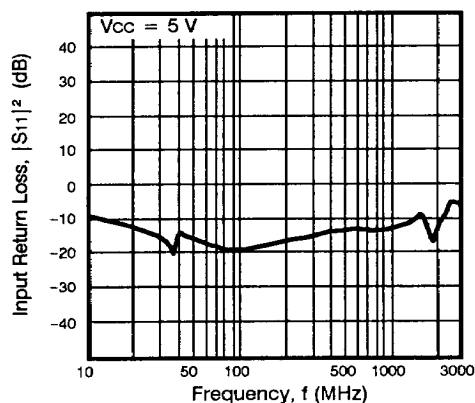
INSERTION GAIN vs. FREQUENCY



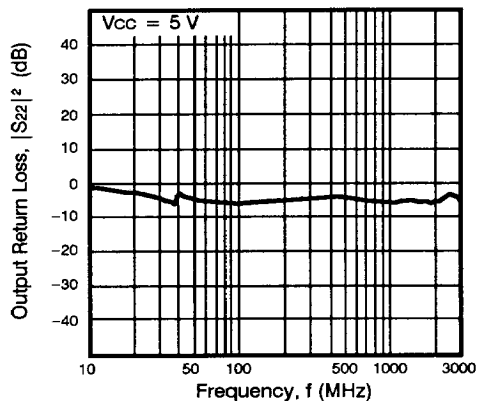
ISOLATION vs. FREQUENCY



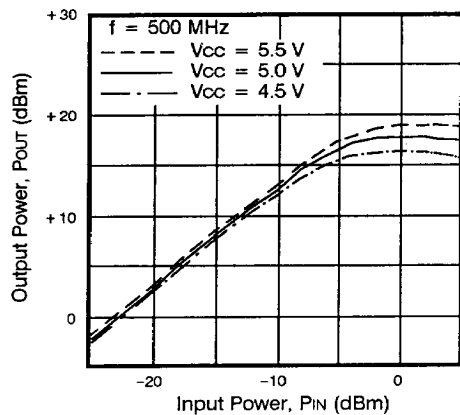
INPUT RETURN LOSS vs. FREQUENCY



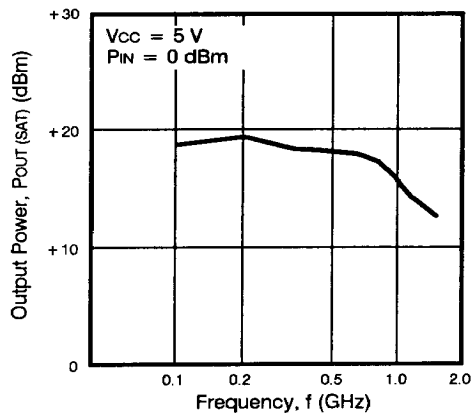
OUTPUT RETURN LOSS vs. FREQUENCY

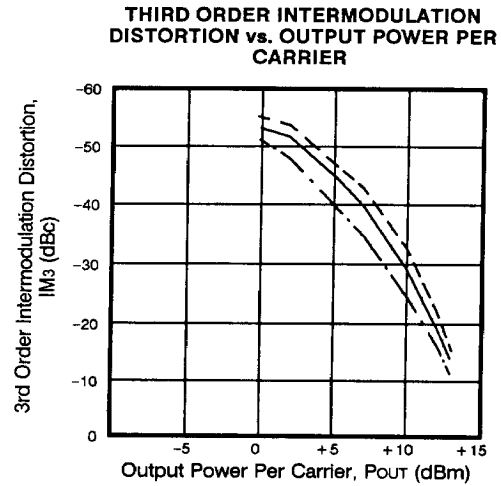
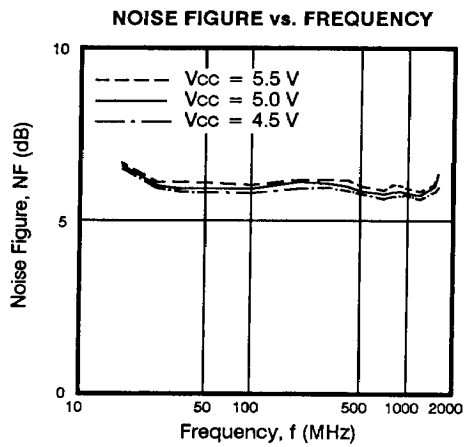


OUTPUT POWER vs. INPUT POWER



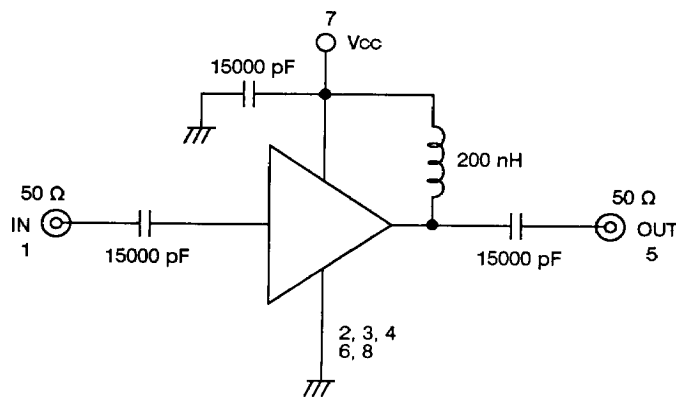
OUTPUT POWER vs. FREQUENCY



TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

TEST CIRCUIT

UPC1678B



UPC1678G

