NEC®

T-74-13-01

850 MHz WIDE-BAND SILICON MMIC AMPLIFIER

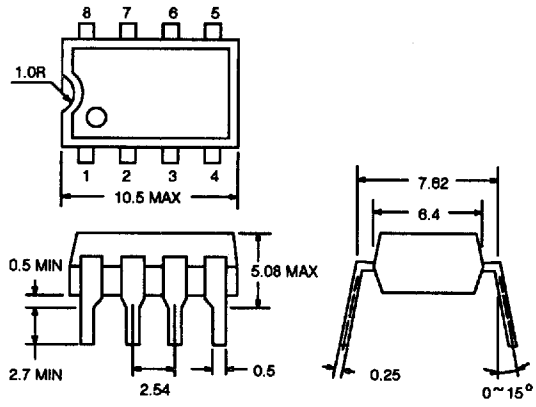
UPC1656C

FEATURES

- 850 MHz FREQUENCY RESPONSE @ 3 dB DOWN
- POWER GAIN OF 19 dB @ f = 500 MHz
- 10.5 dBm OUTPUT POWER
- LOW COST PACKAGE
- 50 Ω GAIN BLOCK

OUTLINE DIMENSIONS (Units in mm)

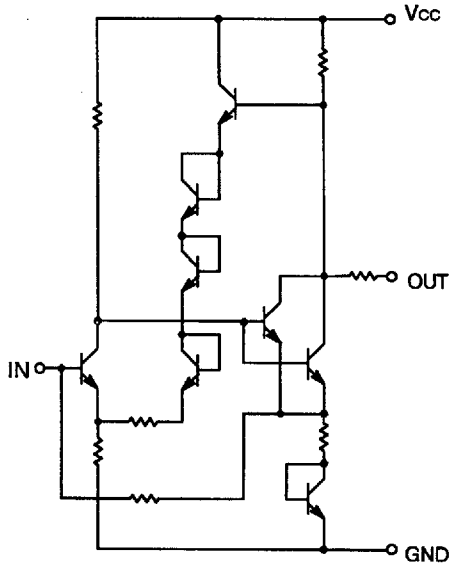
OUTLINE C08



DESCRIPTION AND APPLICATIONS

The UPC1656C is a silicon monolithic integrated circuit especially designed as a wide-band amplifier covering the HF band through UHF band. Particularly useful when high power is required.

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V_{CC}	Supply Voltage	V	11
P_T	Total Power Dissipation	mW	600
T_{OP}	Operating Temperature	°C	-40 to +85
T_{STG}	Storage Temperature	°C	-55 to +150

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

PART NUMBER / PACKAGE OUTLINE			UPC1656C C08		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I_{CC}	Circuit Current at V_{CC} = 10 V	mA	38	43	48
G_P	Power Gain at V_{CC} = 10 V, f = 500 MHz	dB	17	19	21
NF	Noise Figure at V_{CC} = 10 V, f = 500 MHz	dB		5.5	6.5
BW	Band-Width at V_{CC} = 10 V, 3 dB down	MHz	750	850	
I_{SOL}	Isolation at V_{CC} = 10 V, f = 500 MHz	dB	24	27	
RL_{IN}	Input Return Loss at V_{CC} = 10 V, f = 500 MHz	dB	17	20	
RL_{OUT}	Output Return Loss at V_{CC} = 10 V, f = 500 MHz	dB	4	7	
$P_{O(SAT)}$	Saturated Output Power at V_{CC} = 10 V, f = 500 MHz	dBm	9	10.5	

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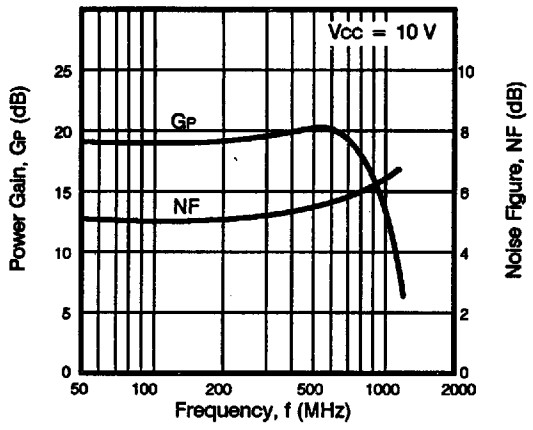
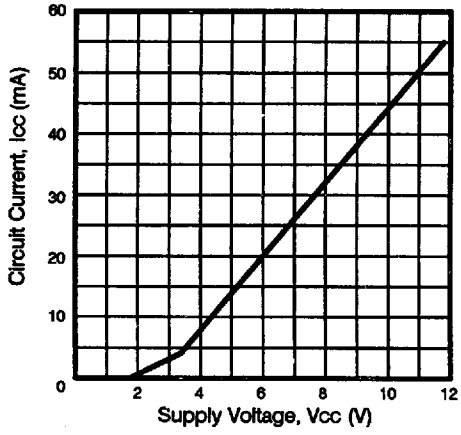
TYPICAL PERFORMANCE CHARACTERISTICS (T_A = 25°C)

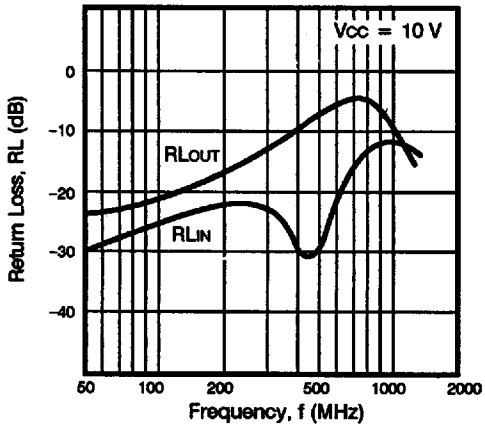
NOISE FIGURE AND VOLTAGE GAIN vs. FREQUENCY



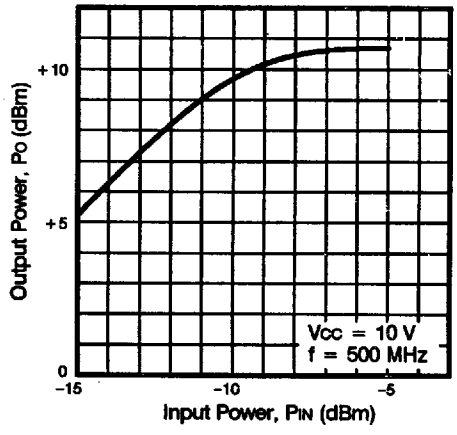
CIRCUIT CURRENT vs. SUPPLY VOLTAGE



INPUT AND OUTPUT RETURN LOSS vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER



ISOLATION vs. FREQUENCY