DATA SHEET

NEC

BIPOLAR ANALOG INTEGRATED CIRCUIT

μPC1655C

SILICON MONOLITHIC BIPOLAR INTEGRATED CIRCUIT
WIDE BAND AMPLIFIER

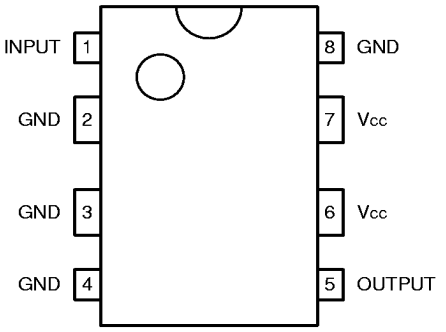
DESCRIPTION

The μPC1655C is a silicon monolithic integrated circuit especially designed as a wide band amplifier convering HF band through UHF band.

FEATURES

- Excellent frequency response : 800 MHz TYP. @ 3 dB down
- High power gain : 18 dB TYP. @ f = 500 MHz
- Low voltage operation : V_{CC} = 5 V
- Small package

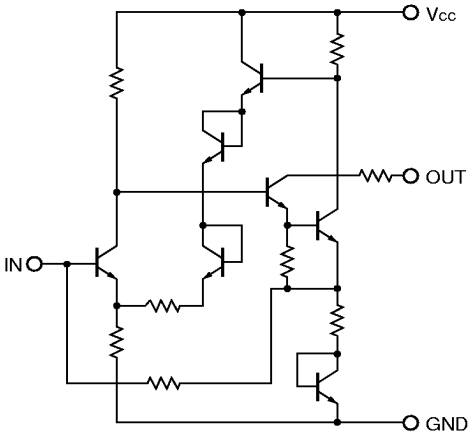
CONNECTION DIAGRAM (Top View)



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

Supply Voltage	V_{CC}	7	V
Total Power dissipation	P_T	600	mW
Operating Temperature	T_{opt}	–20 to +75	°C
Storage Temperature	T_{stg}	–40 to +125	°C

EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS (T_A = –25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Circuit Current	I_{CC}	15	20	25	mA	V_{CC} = 5 V
Gain	G_V	16	18	20	dB	V_{CC} = 5 V, f = 500 MHz
Noise Figure	NF		5.5	6.5	dB	V_{CC} = 5 V, f = 500 MHz
Band Width	BW	800	900		MHz	V_{CC} = 5 V, 3 dB down
Isolation	I_{SO}	24	27		dB	V_{CC} = 5 V, f = 500 MHz
Input Return Loss	$\|S_{11}\|$	15	18		dB	V_{CC} = 5 V, f = 500 MHz
Output Return Loss	$\|S_{22}\|$	10	13		dB	V_{CC} = 5 V, f = 500 MHz
Maximum Output Level	P_O	3	5		dBm	V_{CC} = 5 V, f = 500 MHz

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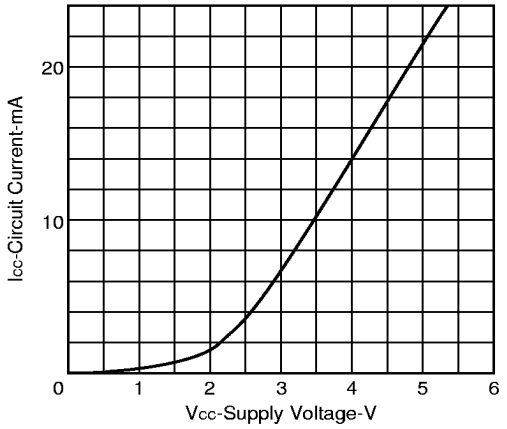
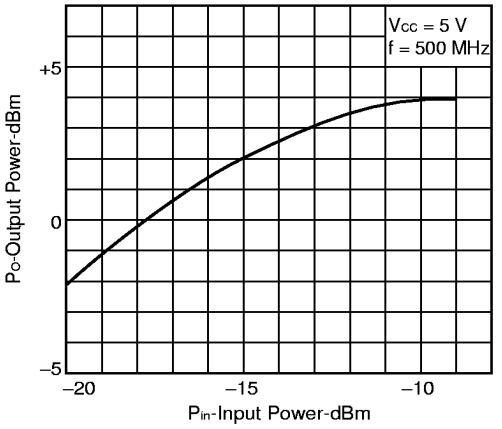
TYPICAL CHARACTERISTICS (T_A = 25 °C)

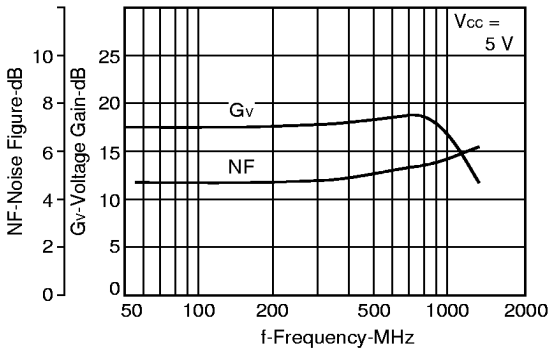
CIRCUIT CURRENT vs. SUPPLY VOLTAGE



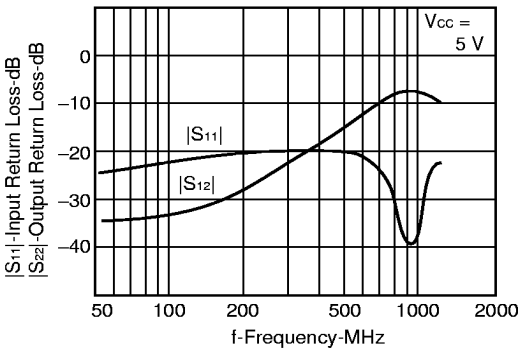
INPUT POWER vs. OUTPUT POWER



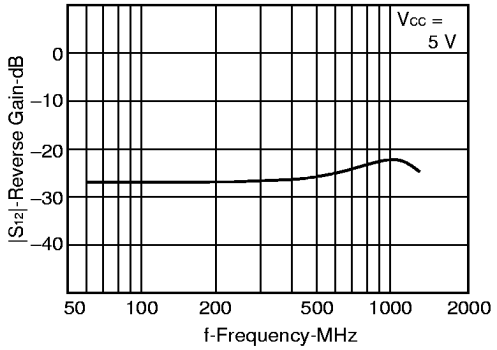
NOISE FIGURE AND VOLTAGE GAIN vs. FREQUENCY



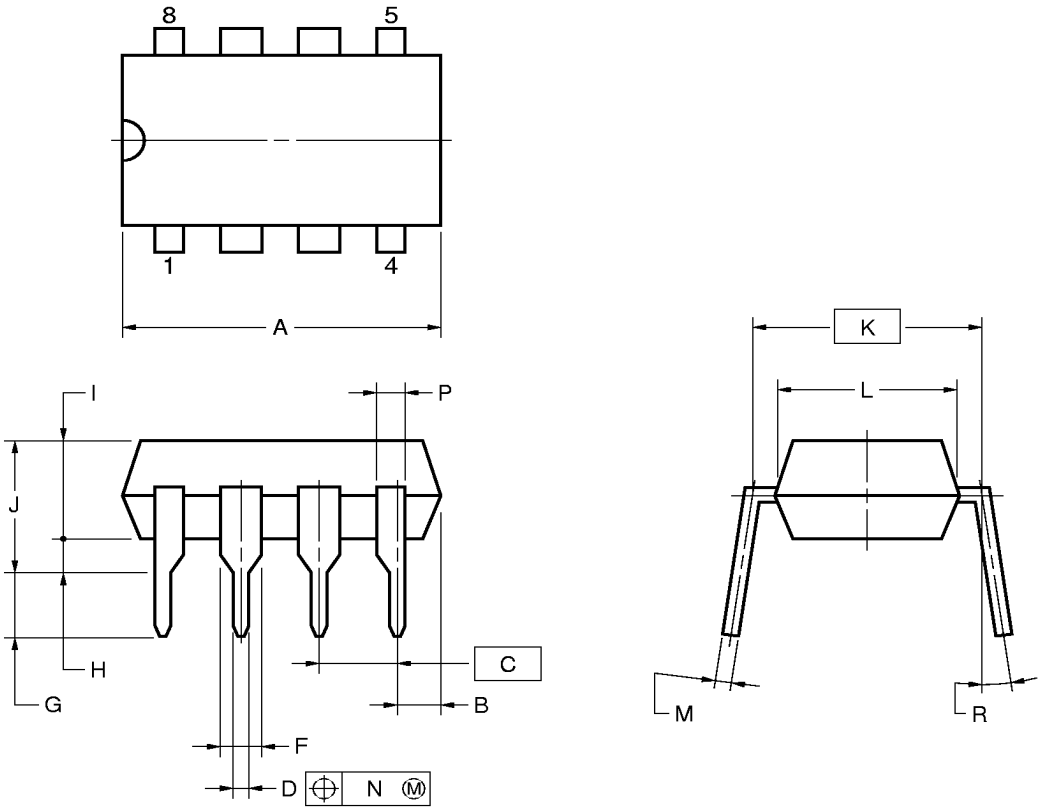
INPUT AND OUTPUT RETURN LOSS vs. FREQUENCY



REVERSE GAIN vs. FREQUENCY



8PIN PLASTIC DIP (300 mil)



NOTES

1) Each lead centerline is located within 0.25 mm (0.01 inch) of its true position (T.P.) at maximum material condition.

2) Item "K" to center of leads when formed parallel.

ITEM	MILLIMETERS	INCHES
A	10.16 MAX.	0.400 MAX.
B	1.27 MAX.	0.050 MAX.
C	2.54 (T.P.)	0.100 (T.P.)
D	0.50 ± 0.10	$0.020^{+0.004}_{-0.005}$
F	1.4 MIN.	0.055 MIN.
G	3.2 ± 0.3	0.126 ± 0.012
H	0.51 MIN.	0.020 MIN.
I	4.31 MAX.	0.170 MAX.
J	5.08 MAX.	0.200 MAX.
K	7.62 (T.P.)	0.300 (T.P.)
L	6.4	0.252
M	$0.25^{+0.10}_{-0.05}$	$0.010^{+0.004}_{-0.003}$
N	0.25	0.01
P	0.9 MIN.	0.035 MIN.
R	0~15°	0~15°

P8C-100-300B,C-1