NEC

BIPOLAR ANALOG INTEGRATED CIRCUIT

μPC1655C

SILICON MONOLITHIC BIPOLAR INTEGRATED CIRCUIT
WIDE BAND AMPLIFIER

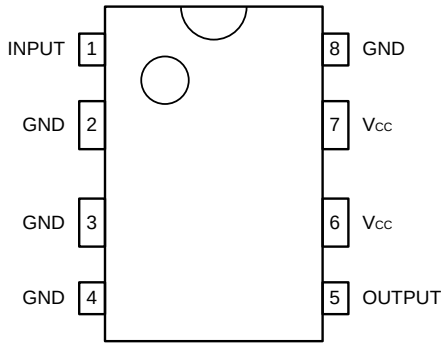
DESCRIPTION

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 : 1 GHz TYP. @ 3 dB down
- High power gain : 18 dB TYP. @ f = 500 MHz
- Supply voltage : V_{CC} = 5 V

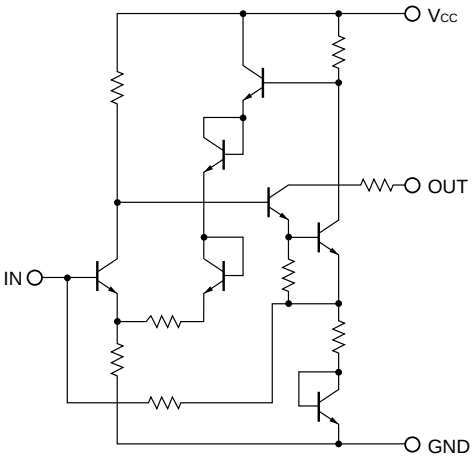
CONNECTION DIAGRAM (Top View)



ABSOLUTE MAXIMUM RATINGS (T_A = +25 °C)

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

INTERNAL EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS (T_A = +25 °C, V_{CC} = 5.0 V)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Circuit Current	I_{CC}	15	20	25	mA	No signal
Power Gain	G_P	16	18	20	dB	f = 500 MHz
Noise Figure	NF		5.5	6.5	dB	f = 500 MHz
Band Width	BW	0.8	1.0		GHz	3 dB down below flat gain
Isolation	I_{SO}	20	24		dB	f = 500 MHz
Input Return Loss	$\|S_{11}\|$	20	25		dB	f = 500 MHz
Output Return Loss	$\|S_{22}\|$	7	10		dB	f = 500 MHz
Maximum Output Level	P_O	3	5		dBm	f = 500 MHz

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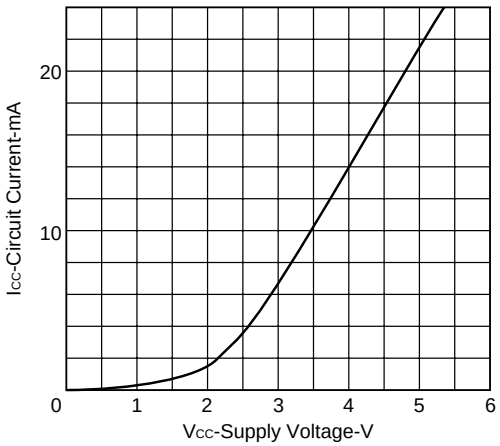
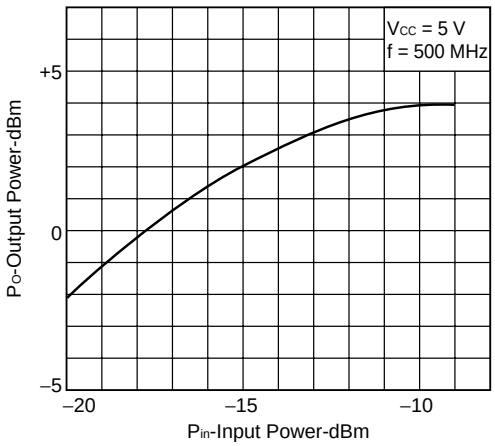
Document No. P12444EJ4V0DS00 (4th edition)
Date Published April 1998 N CP(K)
Printed in Japan

TYPICAL CHARACTERISTICS (T_A = +25 °C)

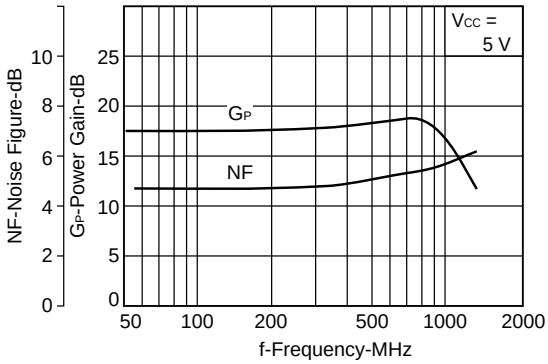
CIRCUIT CURRENT vs. SUPPLY VOLTAGE



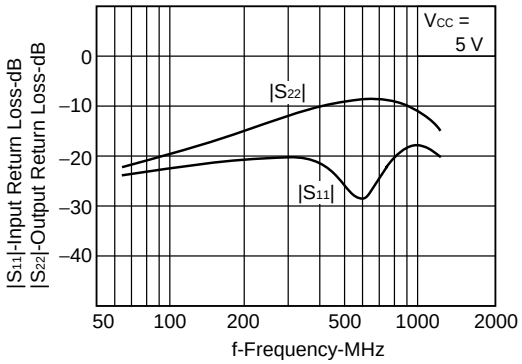
INPUT POWER vs. OUTPUT POWER



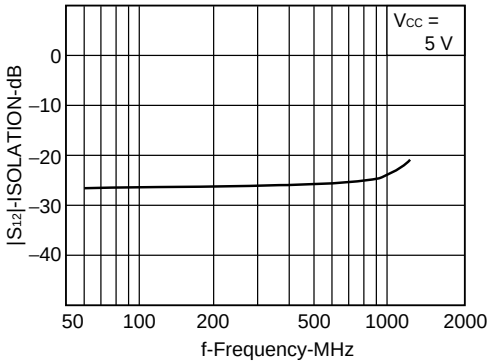
NOISE FIGURE AND POWER GAIN vs. FREQUENCY



INPUT AND OUTPUT RETURN LOSS vs. FREQUENCY

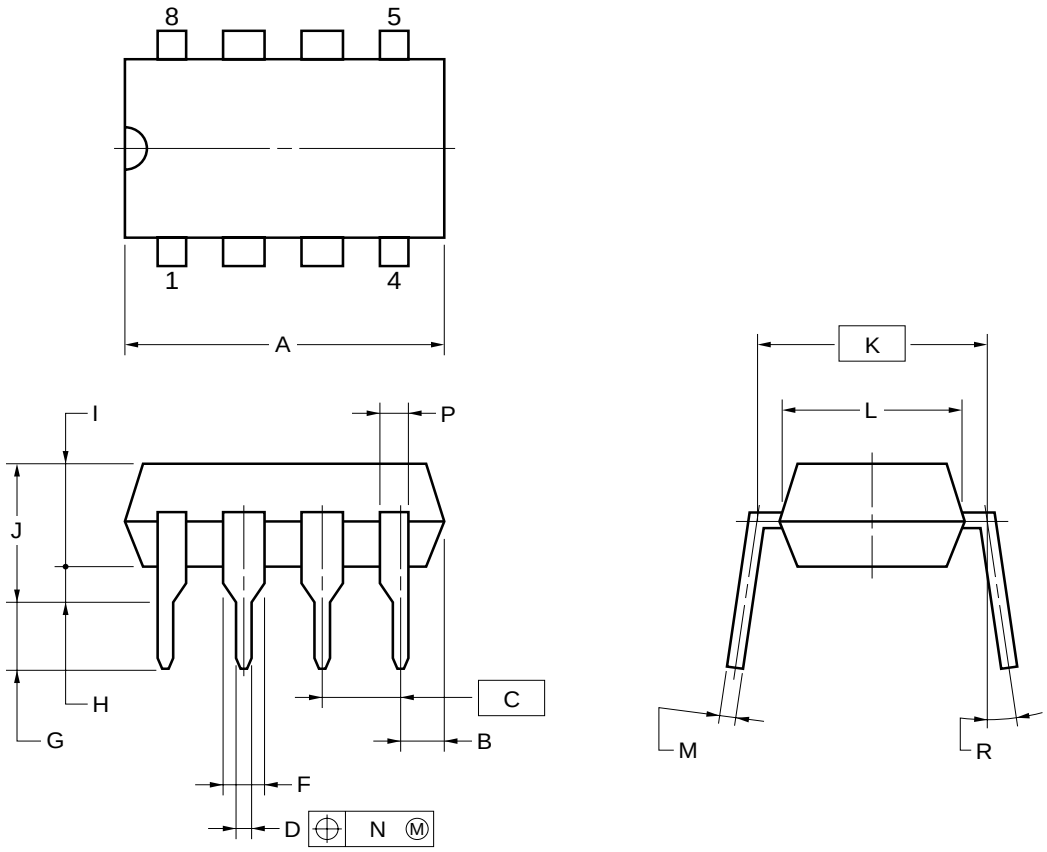


ISOLATION vs. FREQUENCY



For application circuits, please refer to User's manual of μPC1655C. (Document No. P11438E)

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

M4 96.5