

# BIPOLAR ANALOG INTEGRATED CIRCUIT

# $\mu$ PC1655C

## SILICON MONOLITHIC BIPOLAR INTEGRATED CIRCUIT

## WIDE BAND AMPLIFIER

### DESCRIPTION

The  $\mu$ PC1655C is a silicon monolithic integrated circuit especially designed as a wide band amplifier covering HF band through UHF band.

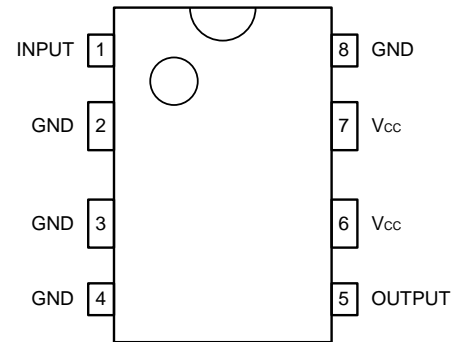
### FEATURES

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

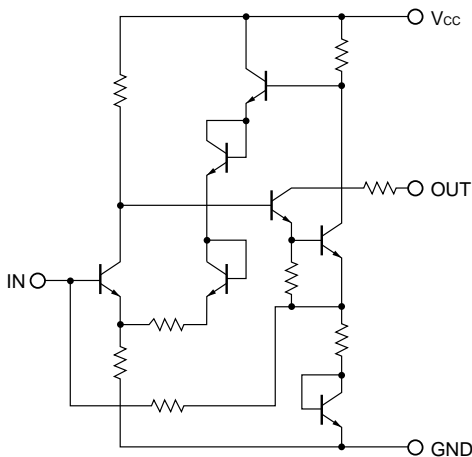
### ABSOLUTE MAXIMUM RATINGS ( $T_A = +25$ °C)

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

### CONNECTION DIAGRAM (Top View)



### INTERNAL EQUIVALENT CIRCUIT



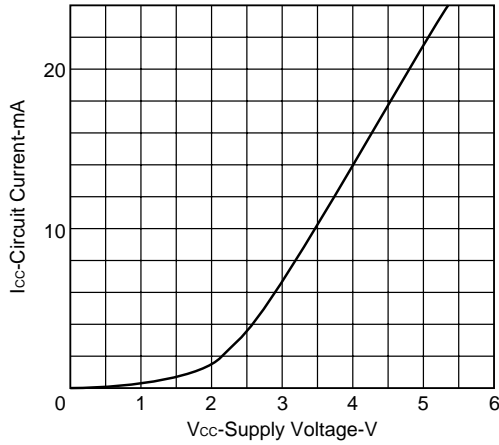
### ELECTRICAL CHARACTERISTICS ( $T_A = +25$ °C, $V_{CC} = 5.0$ V)

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

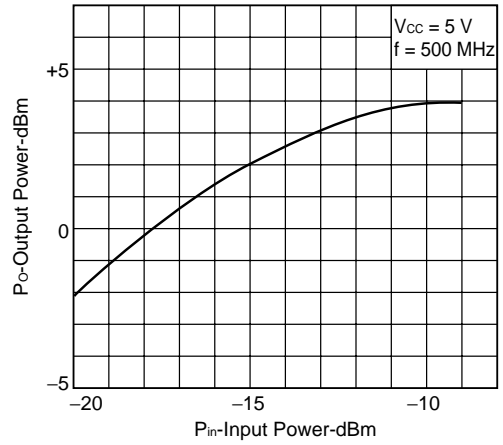
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TYPICAL CHARACTERISTICS (T<sub>A</sub> = +25 °C)

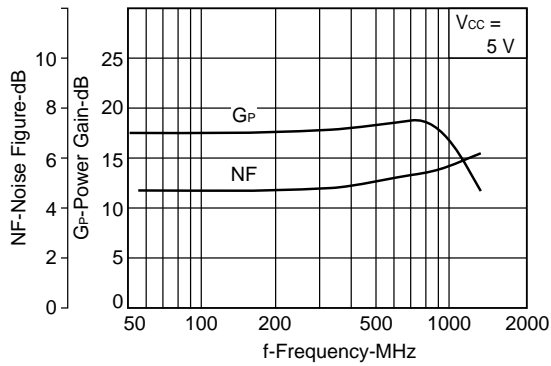
CIRCUIT CURRENT vs. SUPPLY VOLTAGE



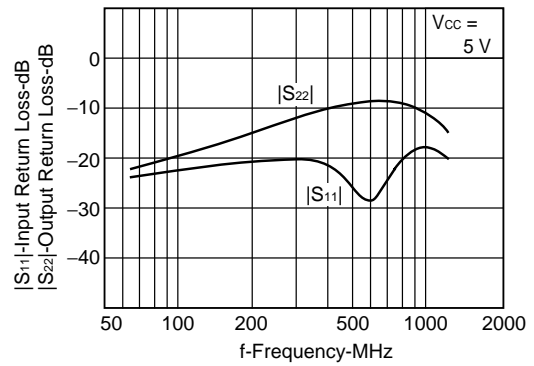
INPUT POWER vs. OUTPUT POWER



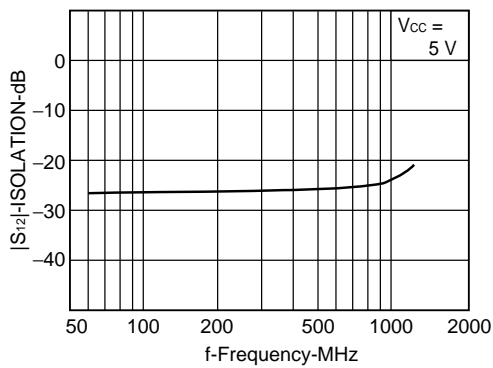
NOISE FIGURE AND POWER GAIN vs. FREQUENCY



INPUT AND OUTPUT RETURN LOSS vs. FREQUENCY

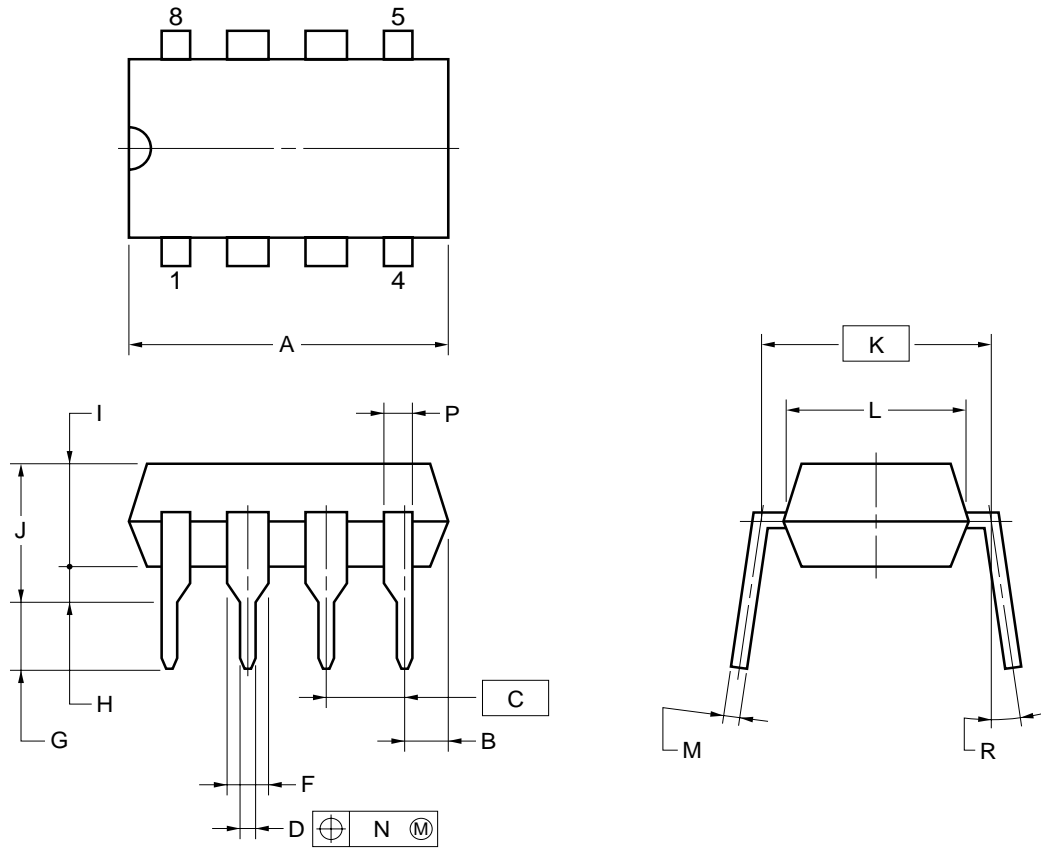


ISOLATION vs. FREQUENCY



For application circuits, please refer to User's manual of  $\mu$ PC1655C. (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 <sup>+0.004</sup> <sub>-0.005</sub>
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 <sup>+0.10</sup> <sub>-0.05</sub>	0.010 <sup>+0.004</sup> <sub>-0.003</sub>
N	0.25	0.01
P	0.9 MIN.	0.035 MIN.
R	0~15°	0~15°

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Anti-radioactive design is not implemented in this product.