

# BIPOLAR ANALOG INTEGRATED CIRCUIT

# $\mu$ PC1675G

### GENERAL PURPOSE WIDE BAND AMPLIFIER

#### DESCRIPTION

The  $\mu$ PC1675G is a silicon monolithic integrated circuit employing small package (4pins mini mold) and designed for use as a wide band amplifier covers from HF band to UHF band.

#### FEATURES

- Excellent frequency response : 1.9 GHz TYP.  
@ 3 dB down below flat gain.
- High isolation.
- Super small package.
- Uni- and low voltage operation :  $V_{CC} = 5 V$
- Input and output matching  $50 \Omega$ .

#### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25 \text{ }^\circ\text{C}$ )

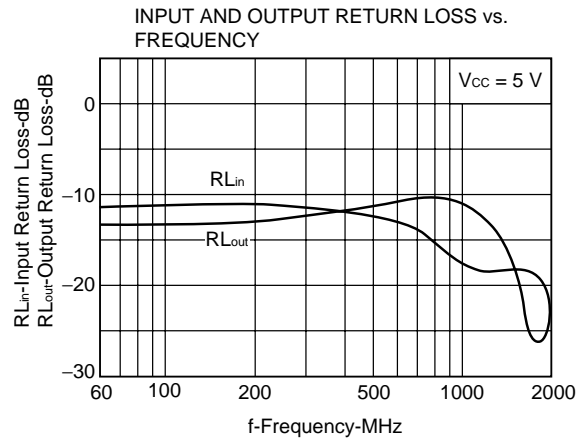
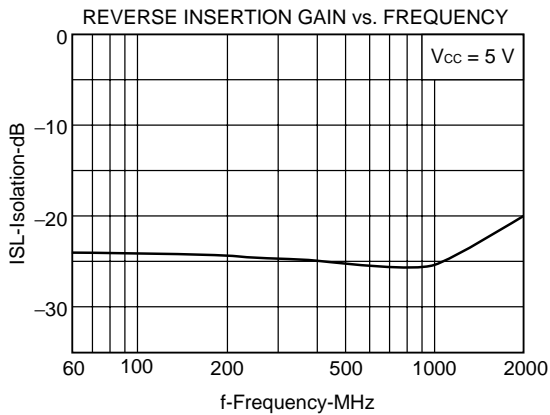
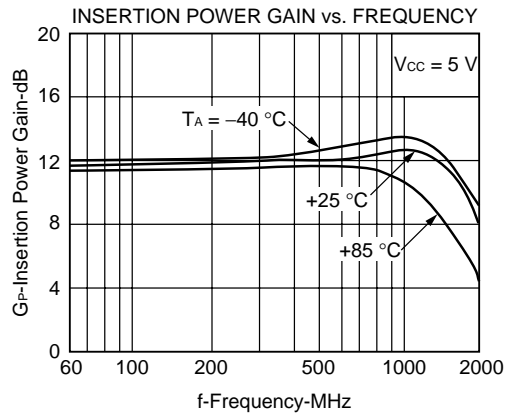
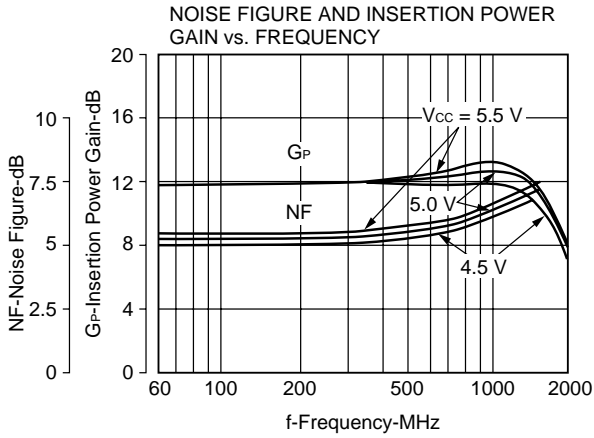
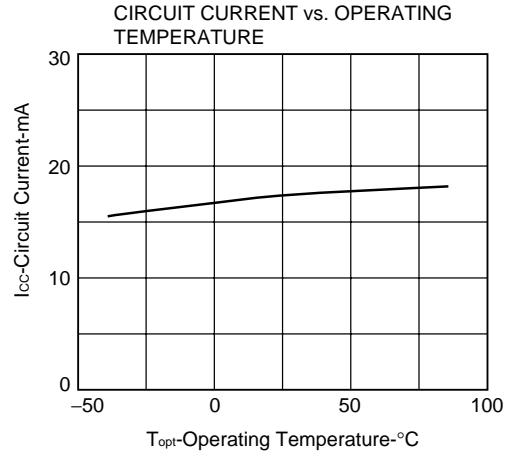
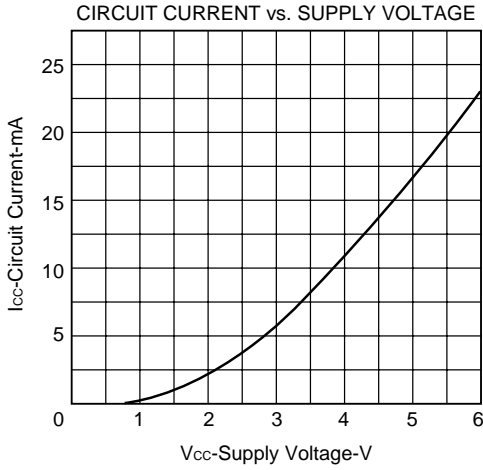
Supply Voltage	$V_{CC}$	6	V
Total Power Dissipation	$P_T$	200	mW
Operating Temperature	$T_{opt}$	-40 to +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

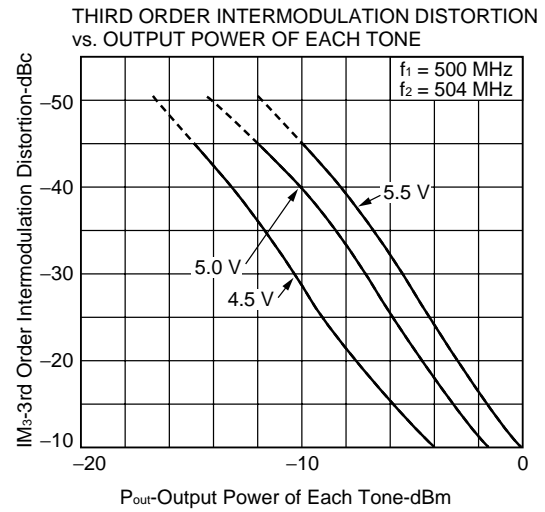
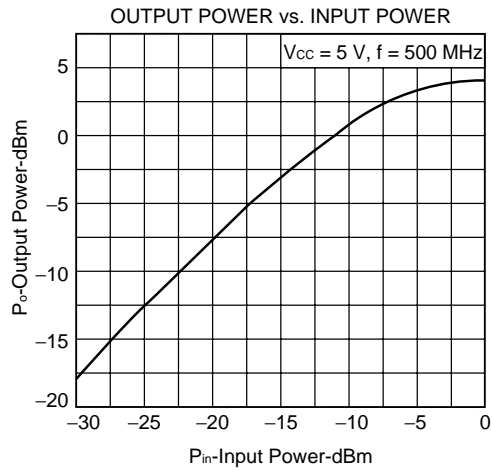
#### ELECTRICAL CHARACTERISTICS ( $T_A = 25 \text{ }^\circ\text{C}$ , $V_{CC} = 5 V$ )

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Circuit Current	$I_{CC}$	12	17	22	mA	No Signal
Power Gain	$G_P$	10	12	14	dB	$f = 0.5 \text{ GHz}$
Noise Figure	NF		5.5	7.0	dB	$f = 0.5 \text{ GHz}$
Upper Limit Operating Frequency	$f_u$	1.6	1.9		GHz	3 dB down below flat gain
Isolation	ISL	21	25		dB	$f = 0.5 \text{ GHz}$
Input Return Loss	$RL_{in}$	9	12		dB	$f = 0.5 \text{ GHz}$
Output Return Loss	$RL_{out}$	8	11		dB	$f = 0.5 \text{ GHz}$
Maximum Output Level	$P_o$	2	4		dBm	$f = 0.5 \text{ GHz}$ , $P_{in} = 0 \text{ dBm}$

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



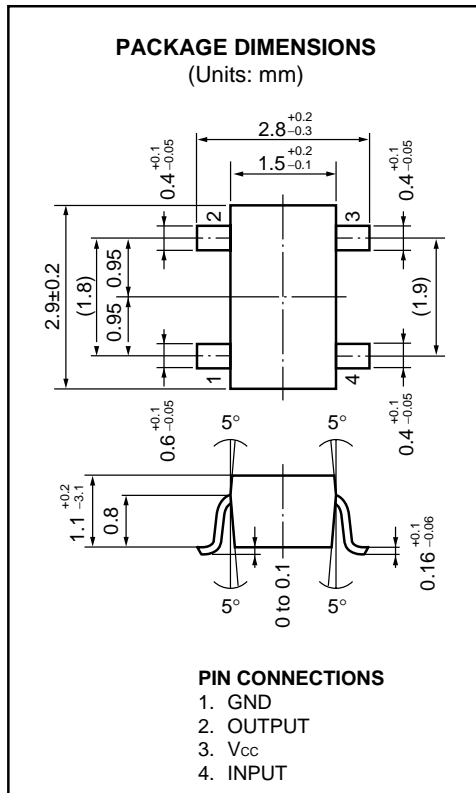


**S-PARAMETER**

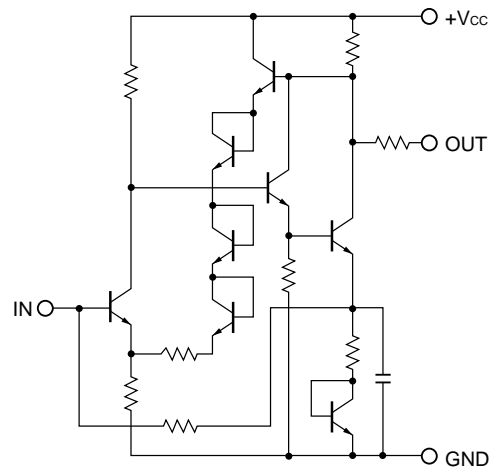
$V_{CC} = 5\text{ V}, Z_0 = 50$

f (MHz)	$ S_{11} $	$\angle S_{11}$	$ S_{21} $	$\angle S_{21}$	$ S_{12} $	$\angle S_{12}$	$ S_{22} $	$\angle S_{22}$
100	0.284	-27.1	3.853	-33.8	0.065	-27.0	0.225	159.1
200	0.287	-55.4	3.877	-67.6	0.064	-51.4	0.235	95.7
400	0.270	-114.3	3.933	-135.5	0.059	-98.3	0.266	15.6
600	0.228	-173.0	4.039	155.7	0.054	-142.3	0.294	-60.1
800	0.178	132.5	4.167	85.3	0.052	177.3	0.305	-134.3
1000	0.136	85.8	4.239	12.8	0.053	138.4	0.283	151.9
1200	0.120	46.0	4.160	-61.0	0.060	97.5	0.229	80.2
1400	0.122	3.6	3.894	-135.0	0.068	53.3	0.156	13.3
1600	0.124	-45.4	3.512	152.1	0.078	6.4	0.084	-40.9
1800	0.114	-98.5	3.083	81.2	0.088	-42.4	0.048	-56.1
2000	0.085	-55.6	2.661	12.1	0.098	-92.6	0.067	-75.0

PACKAGE DIMENSIONS



EQUIVALENT CIRCUIT



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Anti-radioactive design is not implemented in this product.