



BIPOLAR ANALOG INTEGRATED CIRCUIT

μ PC1676G

GENERAL PURPOSE WIDE BAND AMPLIFIER

DESCRIPTION

The μ PC1676G 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 : 1.2 GHz TYP.
@ 3 dB down below flat gain.
- High power gain : 22 dB TYP. @ f = 0.5 GHz.
- High isolation.
- Super small package.
- Uni- and low voltage operation : $V_{CC} = 5 V$
- Input and output matching 50 Ω .

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$)

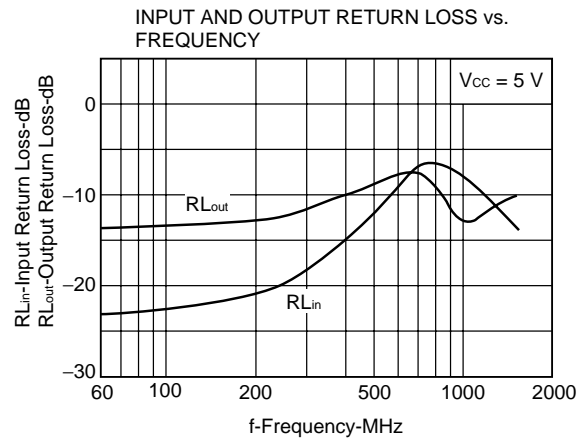
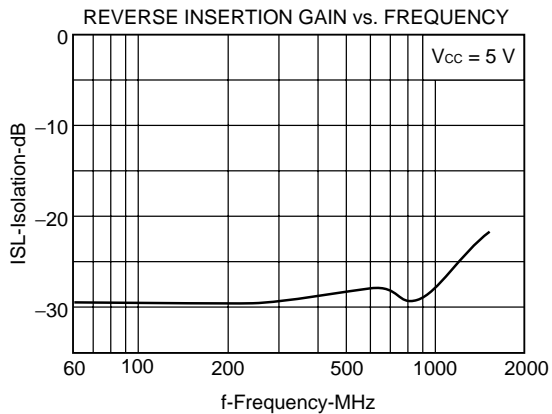
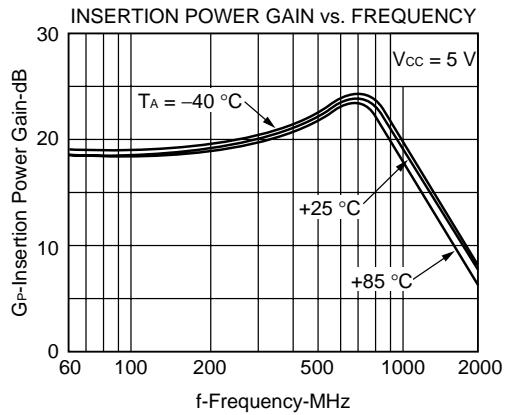
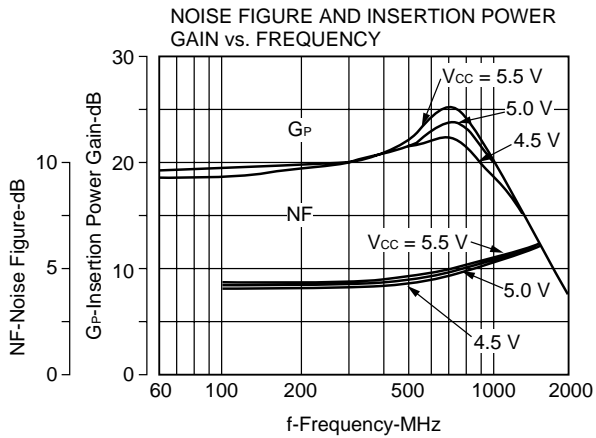
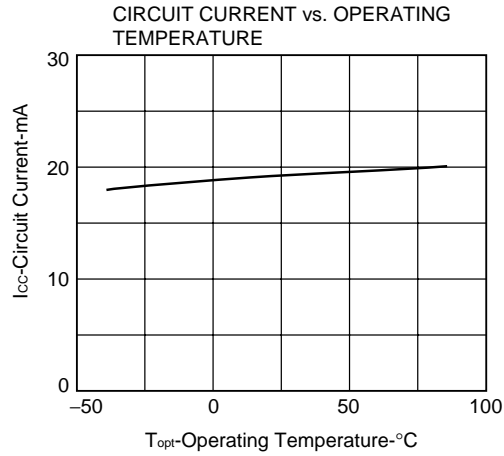
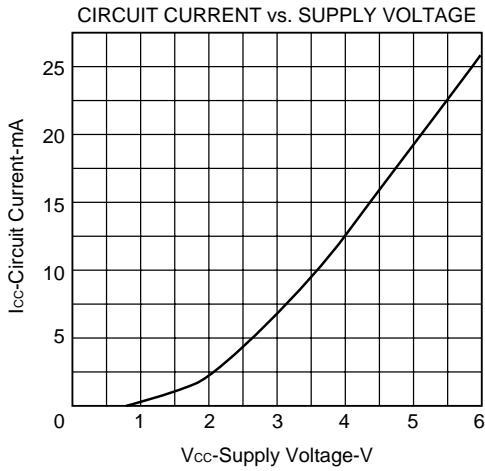
Supply Voltage	V_{CC}	6	V
Total Power Dissipation	P_T	200	mW
Operating Temperature	T_{opt}	-40 to +85	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

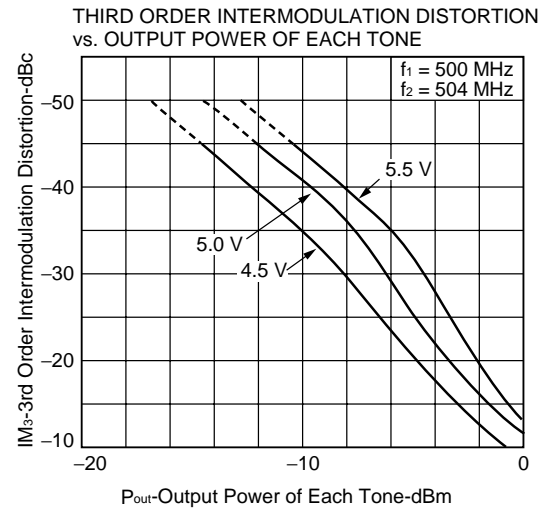
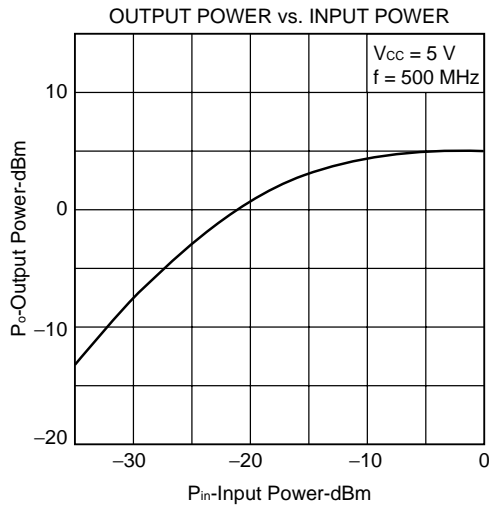
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C, V_{CC} = 5 V$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Circuit Current	I_{CC}	14	19	24	mA	No Signal
Power Gain	G_P	19	22	24	dB	f = 0.5 GHz
Noise Figure	NF		4.5	6.0	dB	f = 0.5 GHz
Upper Limit Operating Frequency	f_u	1.0	1.2		GHz	3 dB down below flat gain
Isolation	ISL	24	28		dB	f = 0.5 GHz
Input Return Loss	RL_{in}	9	12		dB	f = 0.5 GHz
Output Return Loss	RL_{out}	6	9		dB	f = 0.5 GHz
Maximum Output Level	P_o	3	5		dBm	f = 0.5 GHz, $P_{in} = 0$ dBm

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TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)



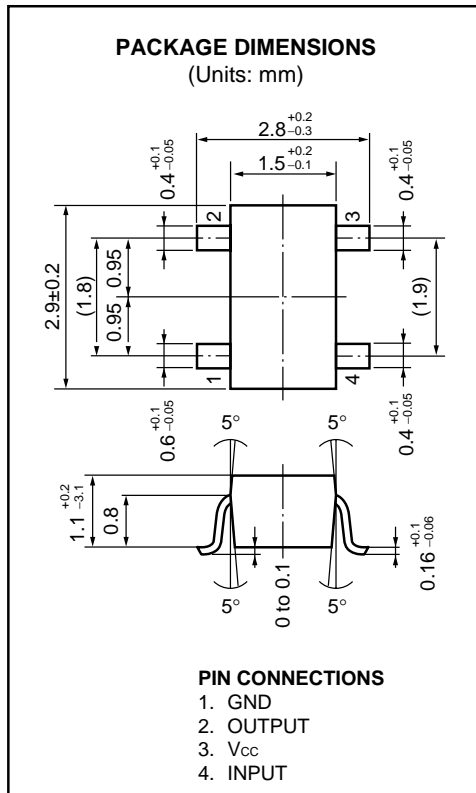


S-PARAMETER

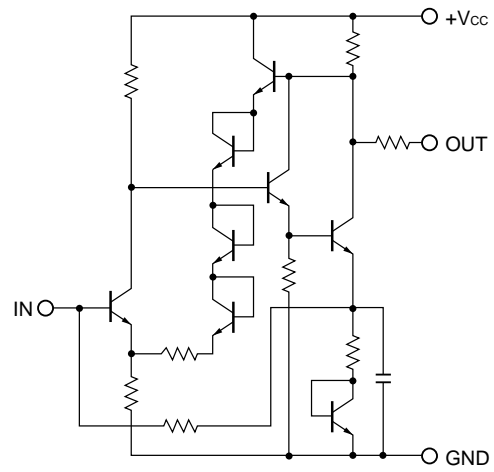
$V_{CC} = 5\text{ V}$, $Z_0 = 50$

f (MHz)	$ S_{11} $	$\angle S_{11}$	$ S_{21} $	$\angle S_{21}$	$ S_{12} $	$\angle S_{12}$	$ S_{22} $	$\angle S_{22}$
100	0.072	-26.5	8.955	-15.3	0.034	-2.0	0.220	171.2
200	0.093	-63.5	9.327	-31.3	0.035	-3.4	0.233	161.3
400	0.175	-120.4	11.021	-66.2	0.038	-8.4	0.303	139.4
600	0.355	-176.4	14.504	-114.3	0.042	-18.4	0.408	107.7
800	0.485	118.7	14.530	177.1	0.037	-25.7	0.361	65.5
1000	0.387	77.5	9.478	123.1	0.044	-20.5	0.231	61.6
1200	0.298	59.2	6.301	85.6	0.057	-28.3	0.251	68.0
1400	0.243	50.5	4.562	53.8	0.070	-41.5	0.292	61.9
1600	0.208	47.1	3.506	24.5	0.083	-56.4	0.313	51.5

PACKAGE DIMENSIONS



EQUIVALENT CIRCUIT



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Anti-radioactive design is not implemented in this product.