

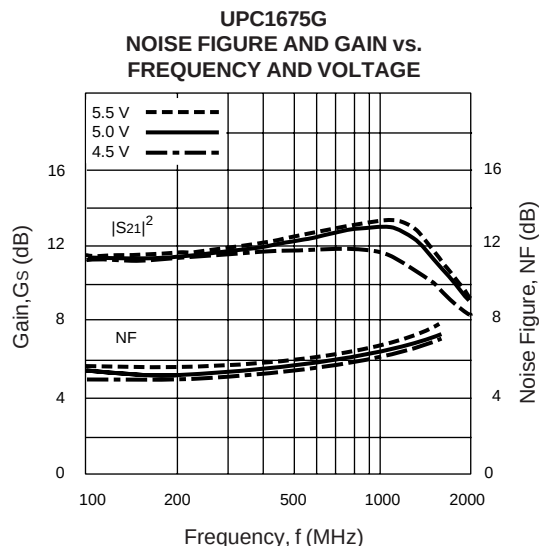
FEATURES

- **WIDE BANDWIDTH:**
1900 MHz at 3 dB Point
- **HIGH ISOLATION**
- **SINGLE POWER SUPPLY:** $V_{CC} = 5\text{ V}$
- **INPUT/OUTPUT MATCHED TO $50\ \Omega$**
- **AVAILABLE IN TAPE AND REEL**

DESCRIPTION

The UPC1675G is a silicon monolithic integrated circuit designed for wide-band amplifiers covering the HF to UHF bands. This device is available in a surface mount package.

NEC's stringent quality assurance and test procedures ensure the highest reliability and performance.



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $V_{CC} = 5\text{ V}$, $f = 500\text{ MHz}$)

PART NUMBER PACKAGE OUTLINE			UPC1675G 39		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I_{CC}	Supply Current	mA	12	17	22
G_s	Small Signal Gain	dB	10	12	14
P_{SAT}	Saturated Output Power	dBm	2	4	
BW^1	Bandwidth	MHz	1600	1900	
NF	Noise Figure	dB		5.5	7
RL_{IN}	Input Return Loss	dB	9	12	
RL_{OUT}	Output Return Loss	dB	8	11	
ISOL	Isolation	dB	21	24.5	

Note:

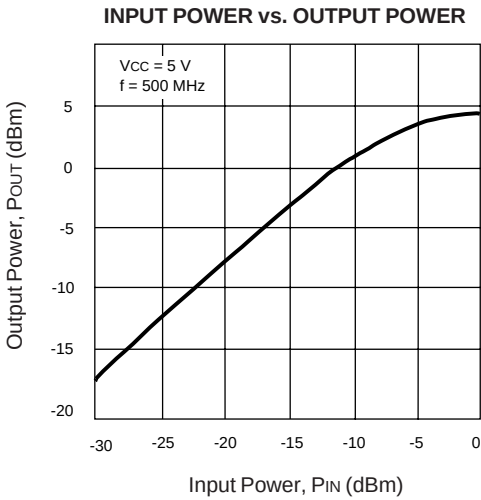
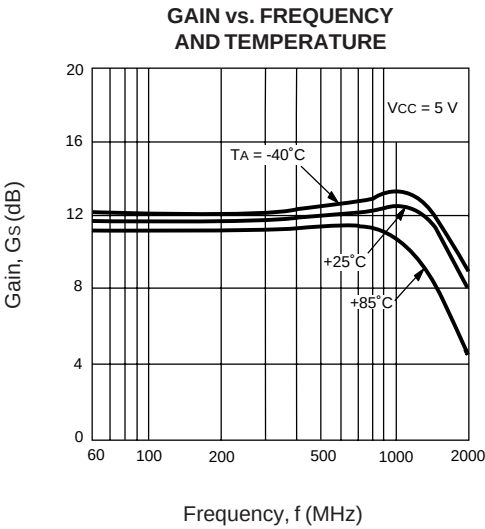
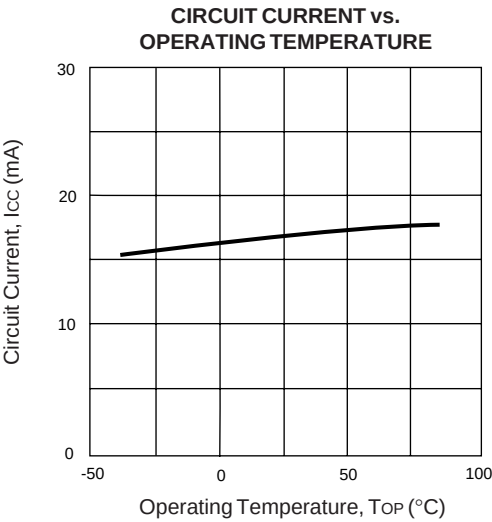
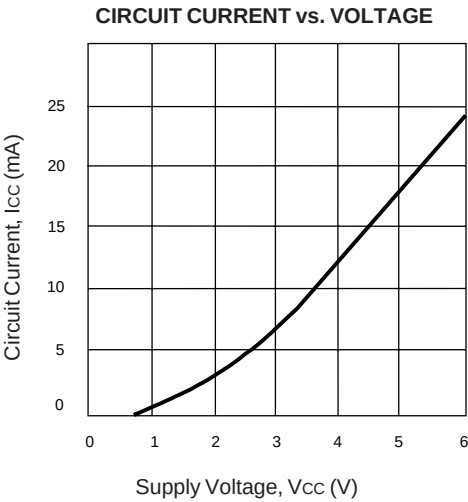
1. Gain is 3 dB down from gain at 100 MHz.

ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

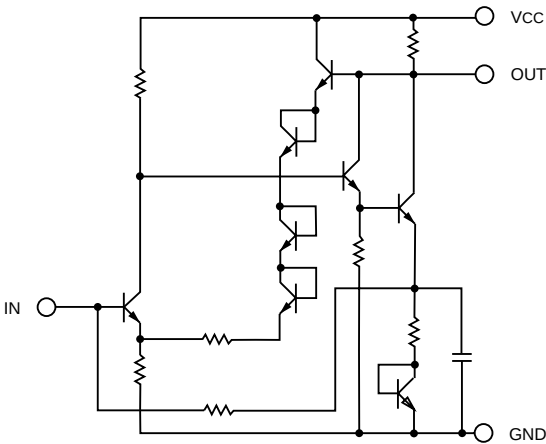
SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{CC}	Power Supply Voltage	V	6
P _T	Total Power Dissipation ²	mW	200
T _{OP}	Operating Temperature	°C	-40 to +85
T _{STG}	Storage Temperature	°C	-55 to +150

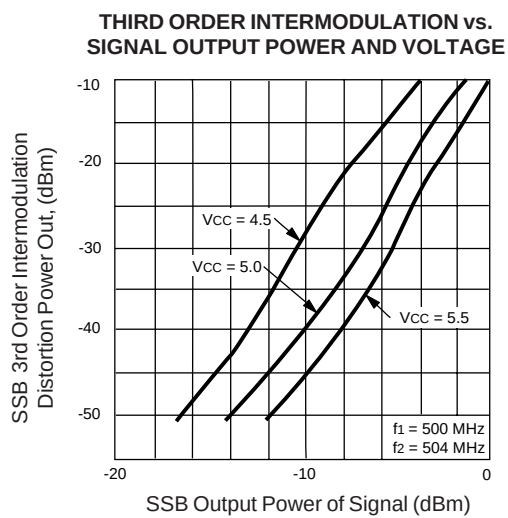
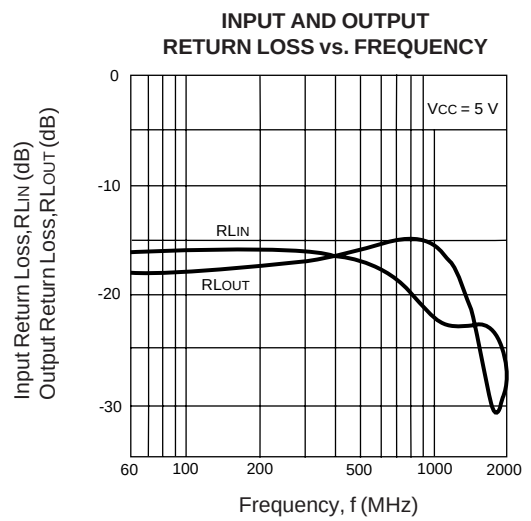
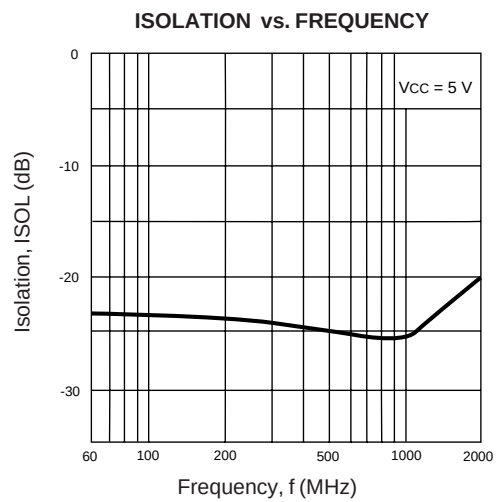
Note:
1. Operation in excess of any one of these parameters may result in permanent damage.
2. T_A = +85°C.

TYPICAL PERFORMANCE CURVES (T_A = 25°C)



EQUIVALENT CIRCUIT



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

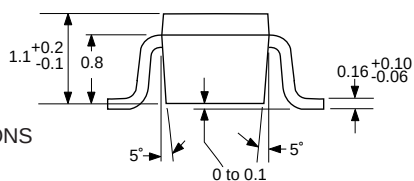
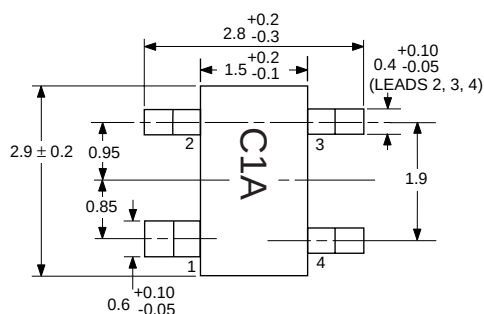
TYPICAL SCATTERING PARAMETERS $(T_A = 25^\circ\text{C})$

UPC1675G

VCC = 5 V, ICC = 17 mA

FREQUENCY MHz	S ₁₁		S ₂₁		S ₁₂		S ₂₂		K	S ₂₁ dB
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
100	0.318	-7.2	4.029	-11.1	0.070	-1.5	0.172	162.7	1.74	12.1
200	0.327	-17.2	4.038	-23.4	0.071	-9.5	0.167	139.5	1.70	12.1
400	0.333	-36.9	4.064	-48.2	0.061	-9.2	0.168	87.4	1.88	12.2
600	0.311	-57.2	4.093	-73.7	0.059	-13.6	0.204	41.0	1.89	12.2
800	0.263	-74.6	4.147	-100.6	0.061	-17.8	0.259	-0.9	1.79	12.4
1000	0.187	-81.9	4.056	-130.3	0.055	-23.1	0.309	-40.5	2.02	12.2
1200	0.143	-69.2	3.837	-160.1	0.046	-28.7	0.319	-77.5	2.55	11.7
1400	0.171	-55.2	3.384	170.1	0.040	-11.2	0.277	-116.3	3.34	10.6
1600	0.203	-56.0	2.882	142.3	0.042	1.4	0.198	-159.1	3.83	9.2
1800	0.214	-67.8	2.371	118.6	0.046	6.4	0.151	148.8	4.31	7.5
2000	0.187	-79.1	1.983	97.4	0.052	10.4	0.159	92.1	4.62	5.9
2200	0.133	-89.5	1.671	78.4	0.064	10.7	0.215	56.6	4.45	4.5
2400	0.066	-93.9	1.433	60.2	0.076	5.7	0.263	34.6	4.32	3.1

OUTLINE DIMENSIONS (Units in mm)

UPC1675G
PACKAGE OUTLINE 39
(SOT-143)PIN
CONNECTIONS

1. GND
2. Output
3. Vcc
4. Input

ORDERING INFORMATION

PART NUMBER	QTY
UPC1675G-T1	3000/Reel

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