

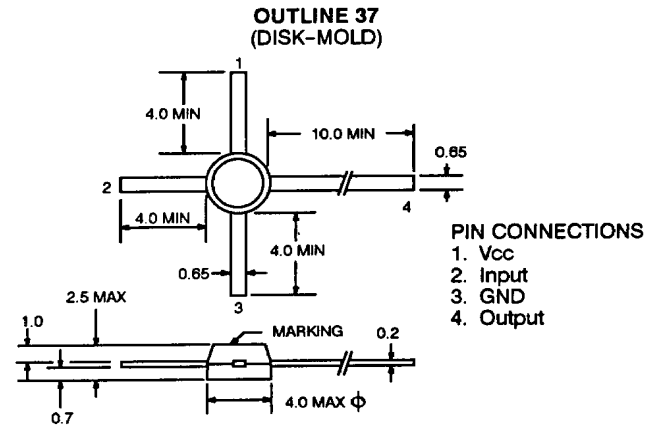
### FEATURES

- **BROAD FREQUENCY RESPONSE:** To 1200 MHz TYP at 3 dB Down
- **HIGH POWER GAIN:** 19 dB TYP at  $f = 500$  MHz
- **LOW VOLTAGE OPERATION:**  $V_{CC} = 5$  V
- **SMALL PACKAGE**

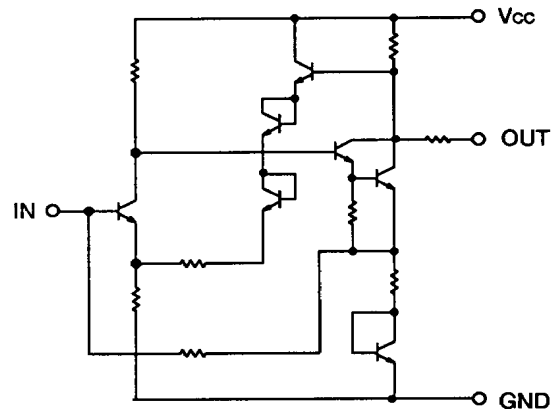
### DESCRIPTION

The UPC1651G is a silicon monolithic integrated circuit especially designed as a wide band amplifier covering the HF band through UHF band.

### OUTLINE DIMENSIONS (Units in mm)



### EQUIVALENT CIRCUIT



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

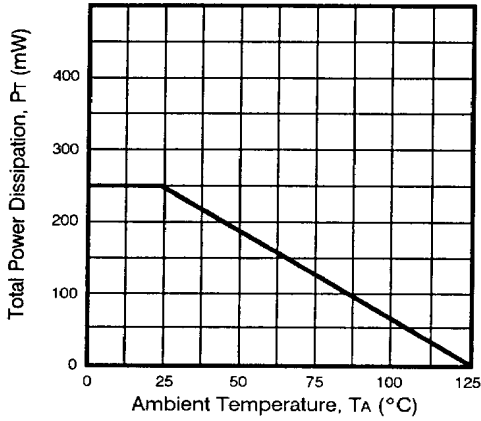
SYMBOLS	PARAMETERS	UNITS	RATINGS
$V_{CC}$	Supply Voltage	V	6
$P_T$	Total Power Dissipation	mW	250
$T_{OP}$	Operating Temperature	$^\circ\text{C}$	-20 to +75
$T_{STG}$	Storage Temperature	$^\circ\text{C}$	-40 to +125

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

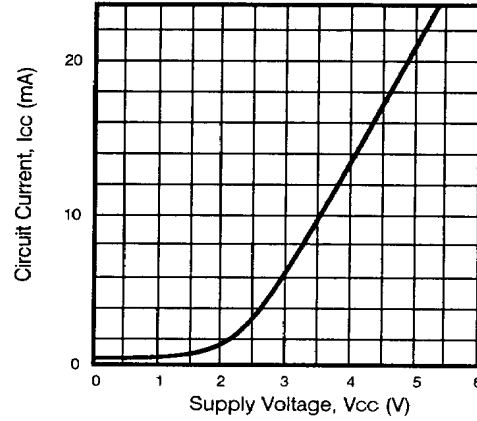
PART NUMBER PACKAGE OUTLINE			UPC1651G 37		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
$I_{CC}$	Circuit Current at $V_{CC} = 5$ V	mA	15	20	25
NF	Noise Figure at $V_{CC} = 5$ V, $f = 500$ MHz	dB		5.5	6.5
BW	Bandwidth at $V_{CC} = 5$ V, 3 dB down	MHz	1000	1200	
$P_{OUT}$	Maximum Output Level at $V_{CC} = 5$ V, $f = 500$ MHz	dBm	3	5	
$ S_{21} $	Power Gain at $V_{CC} = 5$ V, $f = 500$ MHz	dB	16	19	
$ S_{11} $	Input Return Loss at $V_{CC} = 5$ V, $f = 500$ MHz	dB		15	
$ S_{22} $	Output Return Loss at $V_{CC} = 5$ V, $f = 500$ MHz	dB		10	
$ S_{12} $	Isolation at $V_{CC} = 5$ V, $f = 500$ MHz	dB	20	24	

TYPICAL PERFORMANCE CHARACTERISTICS (TA = 25°C)

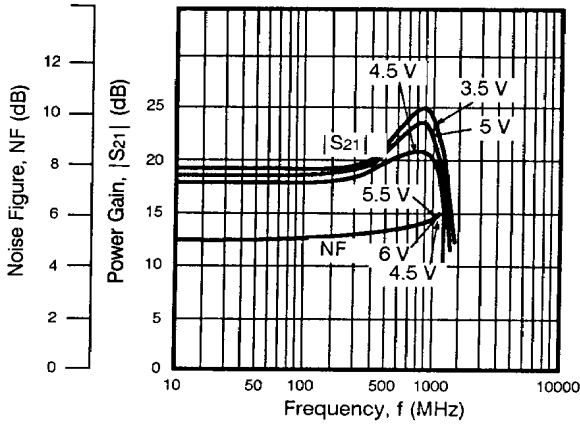
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



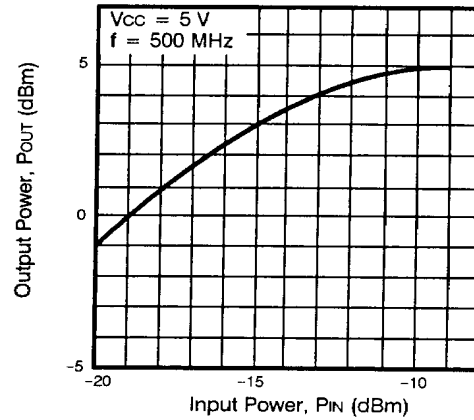
CIRCUIT CURRENT vs. SUPPLY VOLTAGE



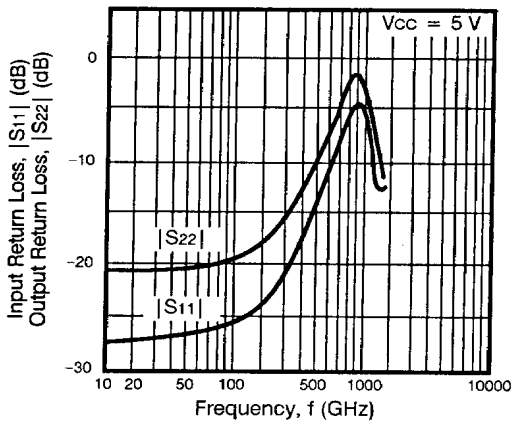
NOISE FIGURE AND POWER GAIN vs. FREQUENCY



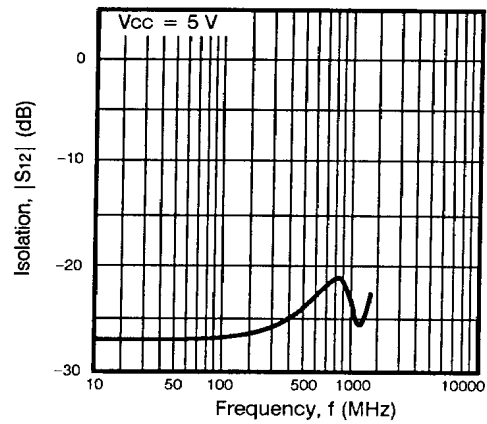
INPUT POWER vs. OUTPUT POWER



INPUT AND OUTPUT RETURN LOSS vs. FREQUENCY



ISOLATION vs. FREQUENCY



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