BIPOLAR ANALOG INTEGRATED CIRCUIT
μPC1651G

SILICON MONOLITHIC BIPOLAR INTEGRATED CIRCUIT
WIDE BAND AMPLIFIER

DESCRIPTION

The μPC1651G is a silicon monolithic integrated circuit especially designed as a wide band amplifier covered from HF band to UHF band.

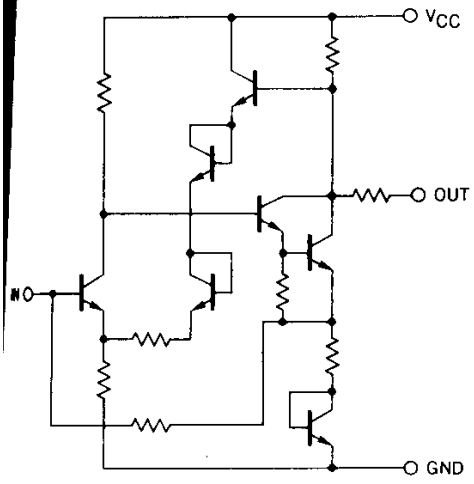
FEATURES

- Excellent frequency response ; TYP. 1 200 MHz @ 3 dB down
- High power gain ; TYP. 19 dB @ f = 500 MHz
- Low voltage operation ; 5 V
- Small package

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Supply Voltage	V_{CC}	6	V
Total Power Dissipation	P_T	250	mW
Operating Temperature	T_{opt}	−20 to +75	°C
Storage Temperature	T_{stg}	−40 to +125	°C

EQUIVALENT CIRCUIT

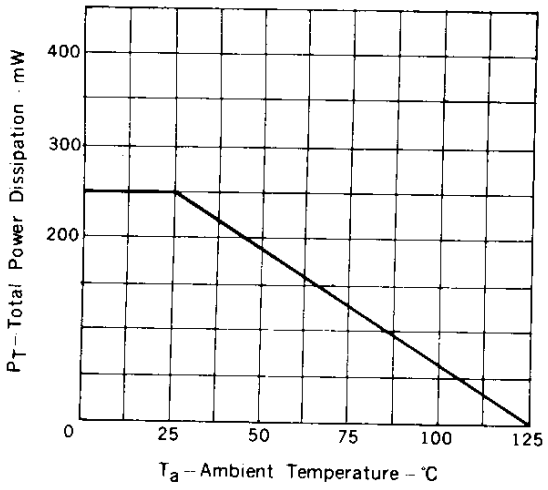


ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

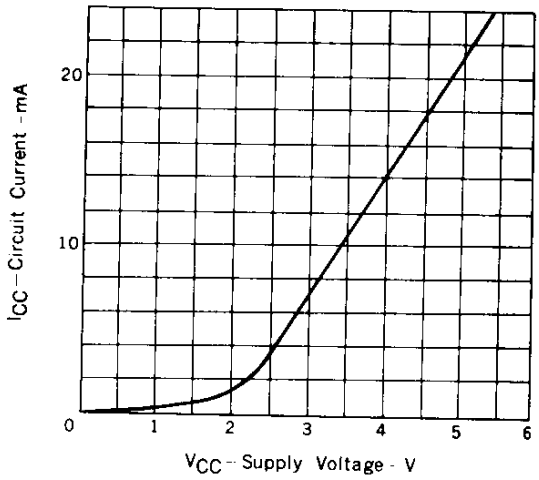
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Circuit Current	I_{CC}	15	20	25	mA	V_{CC} = 5 V
Gain	G_V	16	19		dB	V_{CC} = 5 V, f = 500 MHz
Noise Figure	NF		5.5	6.5	dB	V_{CC} = 5 V, f = 500 MHz
Band Width	BW	1 000	1 200		MHz	V_{CC} = 5 V, 3 dB down
Isolation	I_{so}	20	24		dB	V_{CC} = 5 V, f = 500 MHz
Input Return Loss	$\|S_{11}\|$		15		dB	V_{CC} = 5 V, f = 500 MHz
Output Return Loss	$\|S_{22}\|$		10		dB	V_{CC} = 5 V, f = 500 MHz
Maximum Output Level	P_O	3	5		dBm	V_{CC} = 5 V, f = 500 MHz

TYPICAL CHARACTERISTICS (T_a = 25 °C)

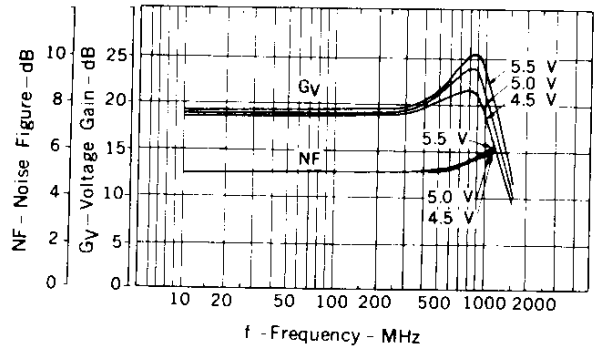
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



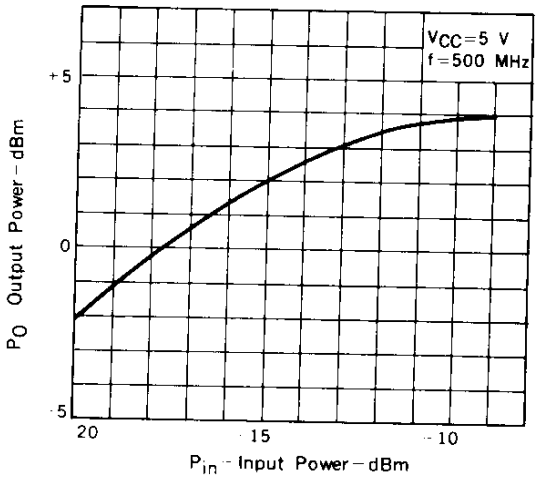
CIRCUIT CURRENT vs. SUPPLY VOLTAGE



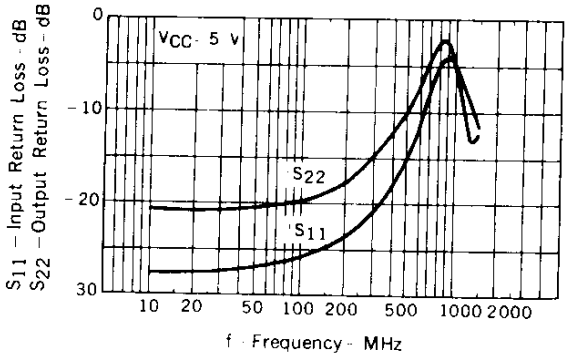
NOISE FIGURE AND VOLTAGE GAIN vs. FREQUENCY



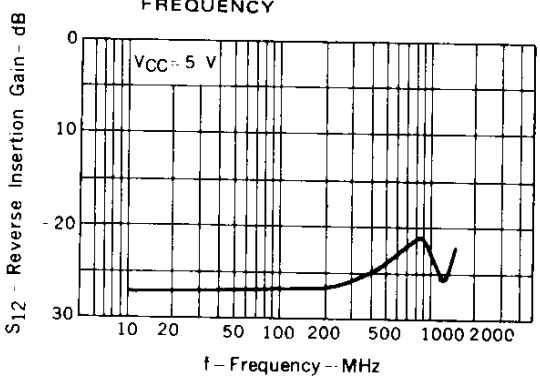
INPUT POWER vs. OUTPUT POWER



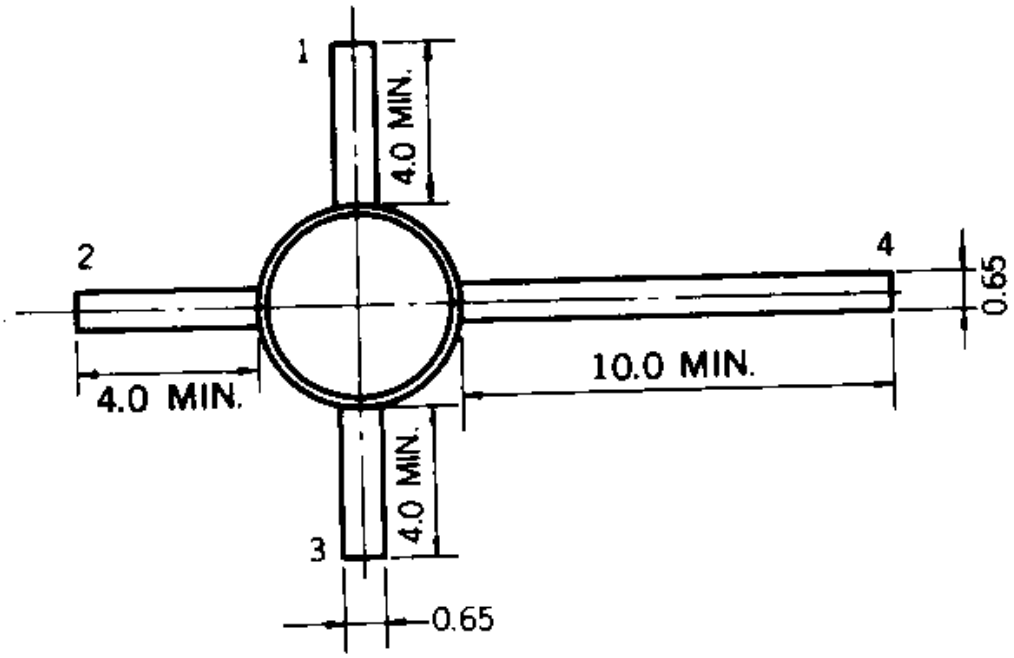
INPUT AND OUTPUT RETURN LOSS vs. FREQUENCY

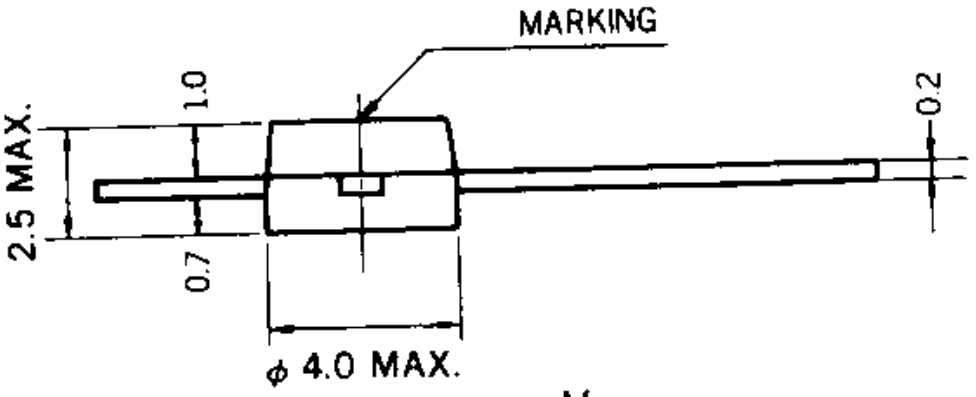


REVERSE INSERTION GAIN vs. FREQUENCY



PACKAGE DIMENSIONS in millimeters





1. V_{CC}
2. INPUT
3. GND
4. OUTPUT