

SONY

CXG1030N

Power Amplifier for PHS

Description

The CXG1030N is a power amplifier for PHS. This IC is designed using the Sony's GaAs J-FET process and operates at a single power supply.

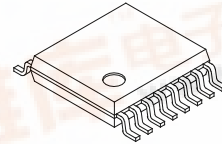
Features

- Output power 21 dBm
- Positive power supply 3.0 V
- Low current consumption 170 mA
- High power gain 39 dB Typ.
- Small mold package 16-pin SSOP

Structure

GaAs J-FET MMIC

16 pin SSOP (Plastic)



Absolute Maximum Ratings (Ta=25 °C)

- Supply voltage VDD 6 V
- Voltage between gate and source Vgs0 1.5 V
- Drain current IDD 500 mA
- Power dissipation Pd 3 W
- Channel temperature Tch 175 °C
- Operating temperature Top -35 to +85 °C
- Storage temperature Tstg -65 to +150 °C

Electrical Characteristics

VDD=3.0 V, VCTL=2.0 V, f=1.90 GHz

(Ta=25 °C)

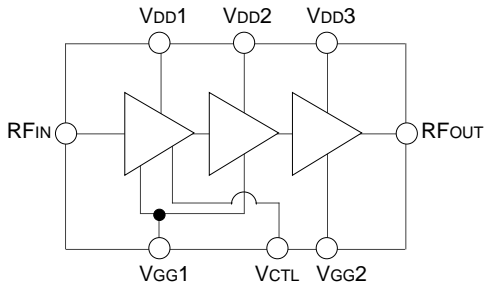
Item	Symbol	Min.	Typ.	Max.	Unit
*1 Current consumption	IDD		170		mA
*1 Gate voltage adjustment value	VGG2	0	0.4	0.8	V
Output power	POUT	21			dBm
*2 Power gain	GP	36	39		dB
*2 Adjacent channel leak power ratio (600 kHz ±100 kHz)	ACPR600		-59	-54	dBc

*1 Values where VGG1 and VGG2 are adjusted so that IDD becomes 170 mA when 21.0 dBm is output.

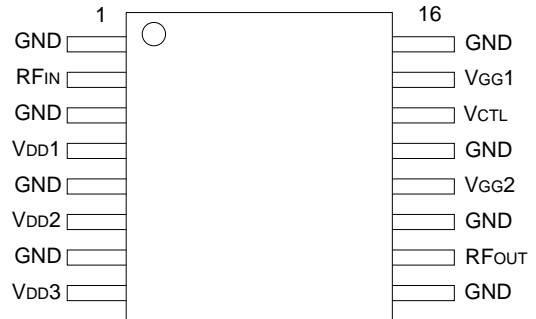
*2 When 21.0 dBm is output.



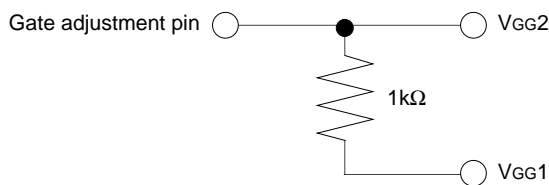
Block Diagram



Pin Configuration

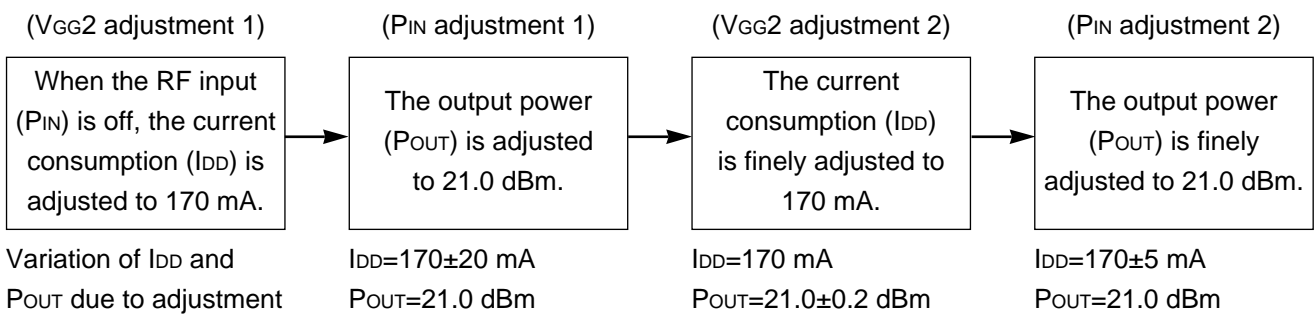


Gate Bias Circuit

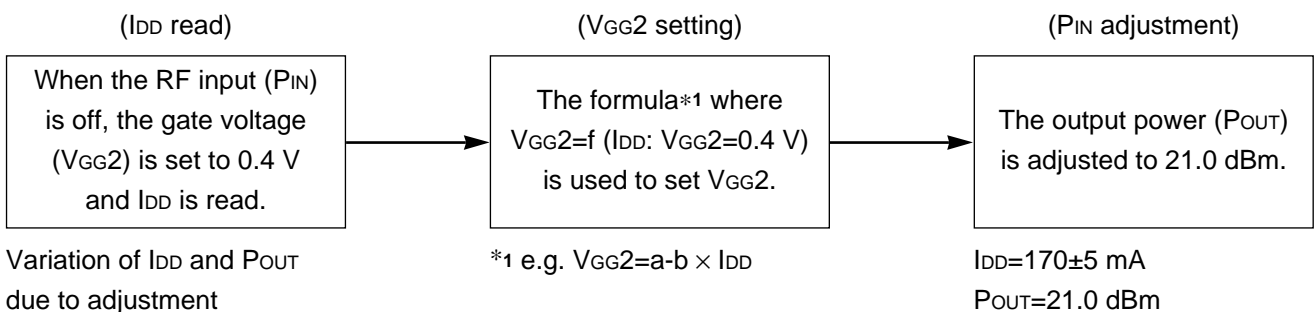


Recommended Current Adjustment Method

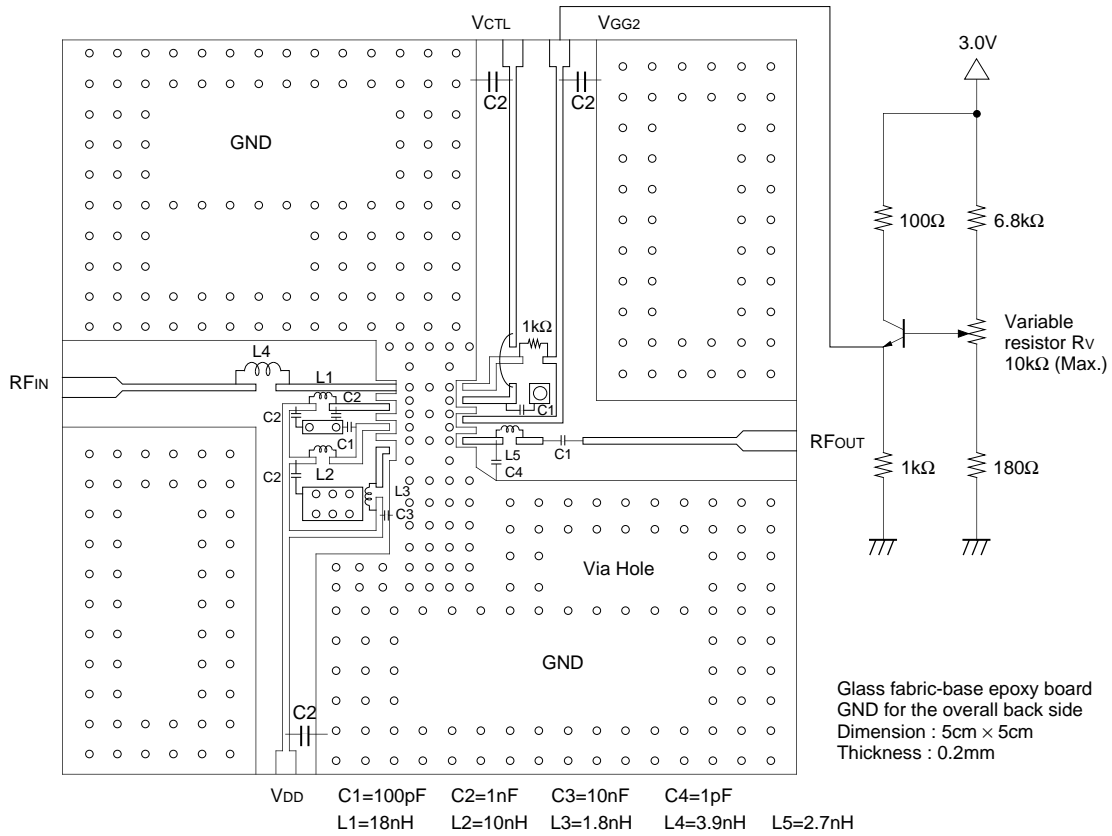
(1) V_{GG2}/P_{IN} separate adjustment



(2) Simple adjustment

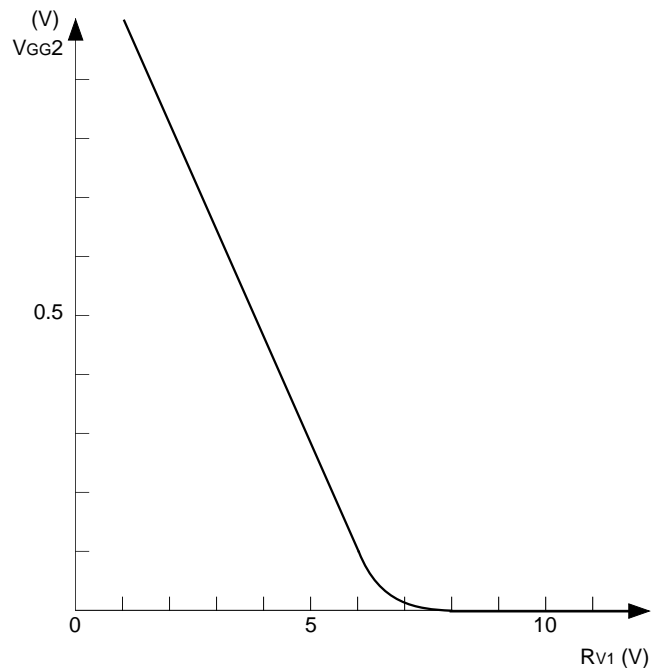
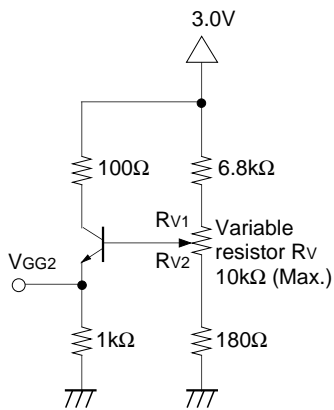


Recommended Evaluation Circuit



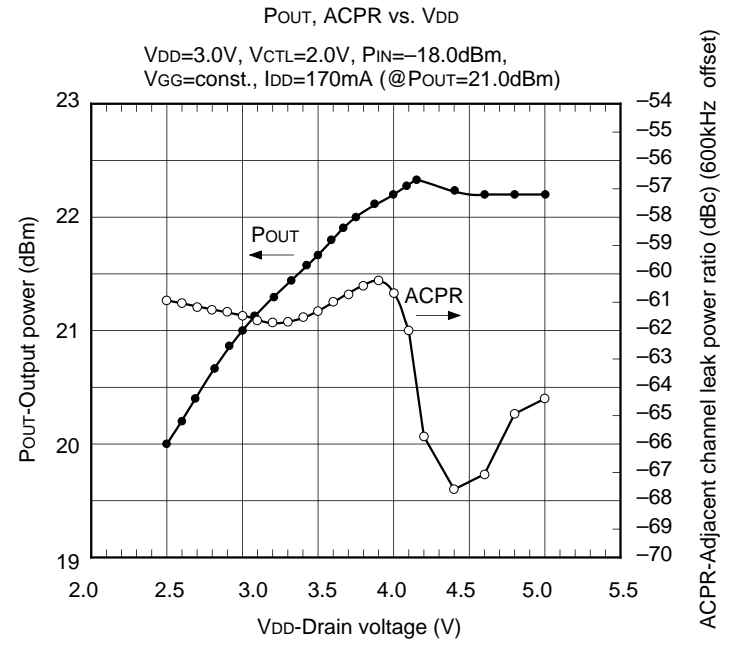
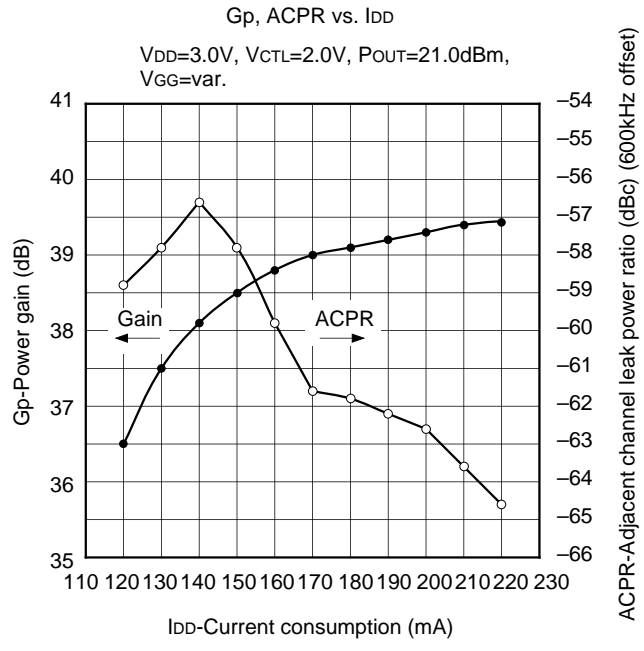
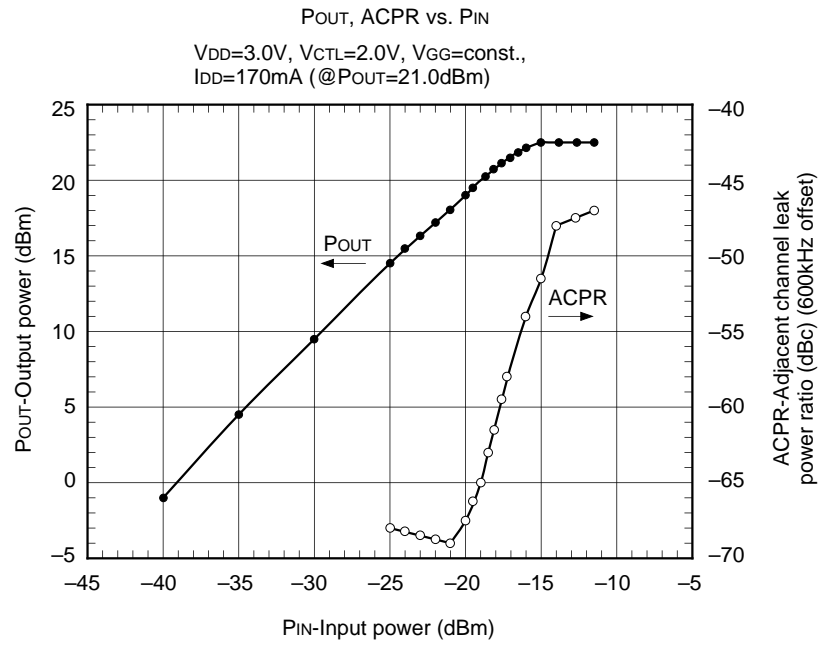
Glass fabric-base epoxy board
 GND for the overall back side
 Dimension : 5cm x 5cm
 Thickness : 0.2mm

Recommended Gate Bias Circuit and Circuit Characteristics



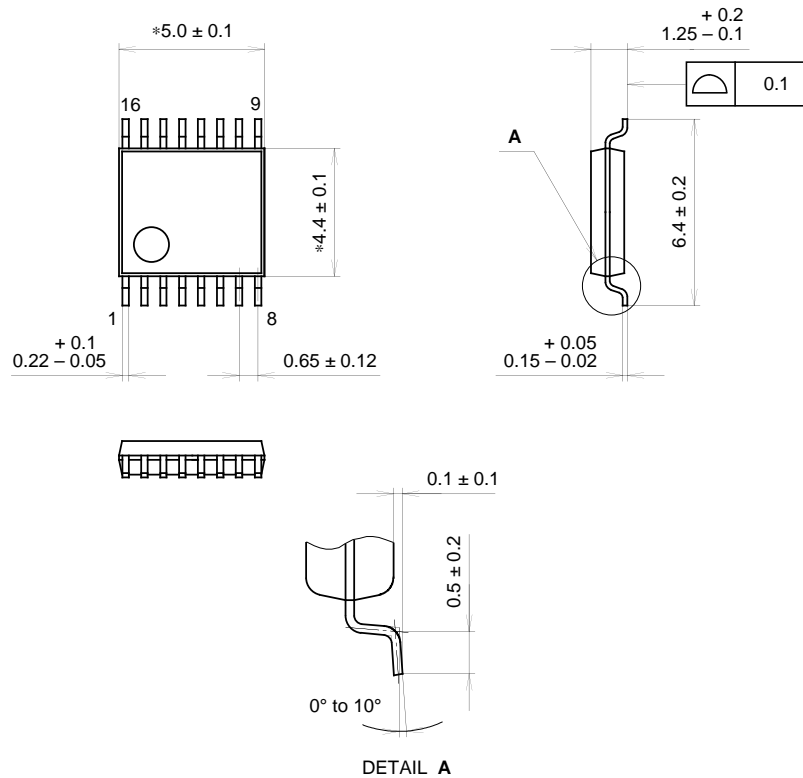
Application circuits shown are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits or for any infringement of third party patent and other right due to same.

Example of Representative Characteristics (Ta=25 °C)



Package Outline Unit : mm

16PIN SSOP (PLASTIC)



NOTE: Dimension "*" does not include mold protrusion.

* : PALLADIUM PLATING
 This product uses PdPPF
 (Palladium Pre-Plated Lead Frame).

PACKAGE STRUCTURE

SONY CODE	SSOP-16P-L01
EIAJ CODE	SSOP016-P-0044
JEDEC CODE	_____

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER / PALLADIUM PLATING
LEAD MATERIAL	COPPER / 42 ALLOY
PACKAGE WEIGHT	0.1g