

# GN01063B

## GaAs IC (with built-in ferroelectric)

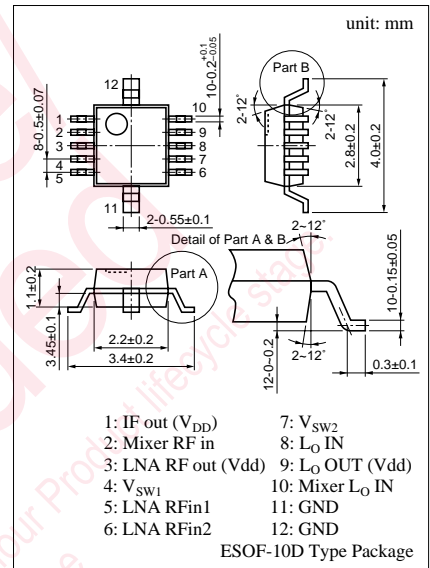
Front-end IC of cellular phone

### ■ Features

- 1-chip front end
- Low consumption current
- Small ESOF-10D package

### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rated	Unit
Power supply voltage	V <sub>DD</sub>	5	V
Circuit current	I <sub>DD</sub>	10	mA
Max input power	P <sub>in</sub>	10	dBm
Allowable power dissipation	P <sub>D</sub>	450	mW
Operating ambient temperature	T <sub>opr</sub>	-30 to +90	°C
Storage temperature	T <sub>stg</sub>	-40 to +120	°C



### ■ Electrical Characteristics (V<sub>DD</sub> = 3V, Ta = 25 ± 3°C, f<sub>RF</sub> = 810 to 885MHz, f<sub>LO</sub> = 940 to 1015MHz)

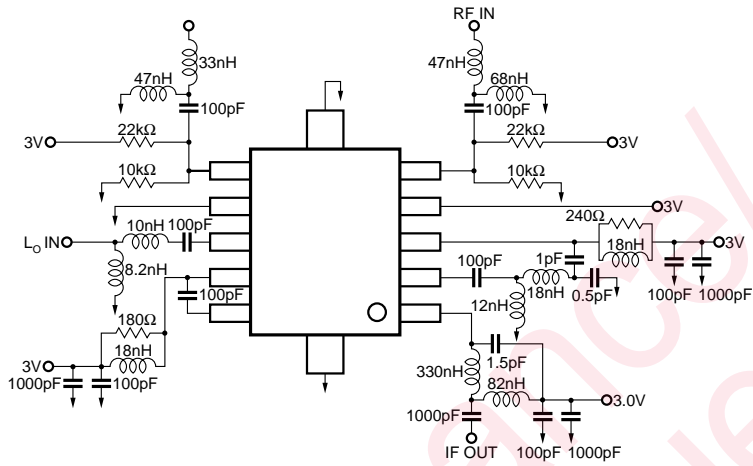
Parameter	Symbol	Conditions	min	typ	max	Unit
Circuit current	I <sub>DD</sub> <sup>*1, 2</sup>		4.8	5.7	8.2	mA
Conversion gain	CG-1 <sup>*1</sup>	P <sub>LO</sub> = -10dBm, f <sub>LO</sub> = 940MHz P <sub>RF</sub> = -45dBm, f <sub>RF</sub> = 810MHz	22	25.5	30	dB
		P <sub>LO</sub> = -10dBm, f <sub>LO</sub> = 1015MHz P <sub>RF</sub> = -45dBm, f <sub>RF</sub> = 885MHz	22	26	30	dB
Output third harmonics mutual modulation distortion	OIP3-1 <sup>*1</sup>	P <sub>LO</sub> = -10dBm, f <sub>LO</sub> = 940MHz P <sub>RF1</sub> = P <sub>RF2</sub> = -45dBm f <sub>RF1</sub> = 810MHz, f <sub>RF2</sub> = 810.1MHz	2	4		dBm
		P <sub>LO</sub> = -10dBm, f <sub>LO</sub> = 1015MHz P <sub>RF1</sub> = P <sub>RF2</sub> = -45dBm f <sub>RF1</sub> = 885MHz, f <sub>RF2</sub> = 885.1MHz	2	5.6		dBm
Noise figure	NF <sup>*1, 2, 3</sup>	P <sub>LO</sub> = -10dBm		2.8	5	dB

<sup>\*1</sup> Refer to measurement circuit-1.

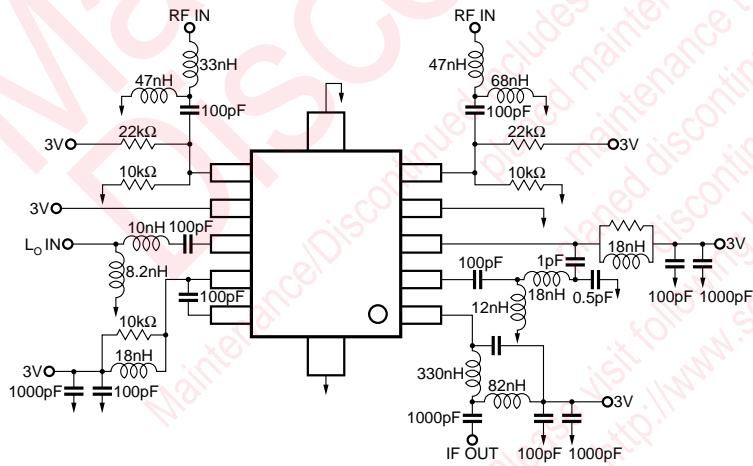
<sup>\*2</sup> Refer to measurement circuit-2.

<sup>\*3</sup> Design-guaranteed items.

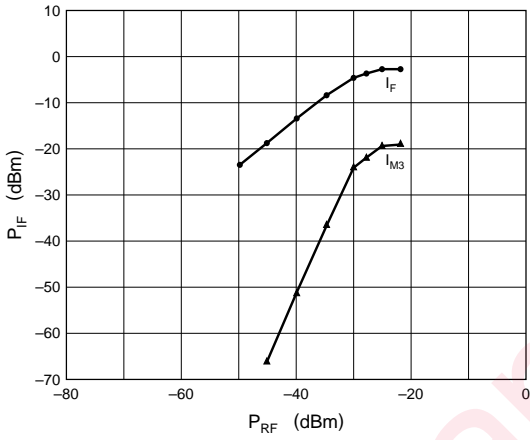
### ■ Measurement Circuit-1



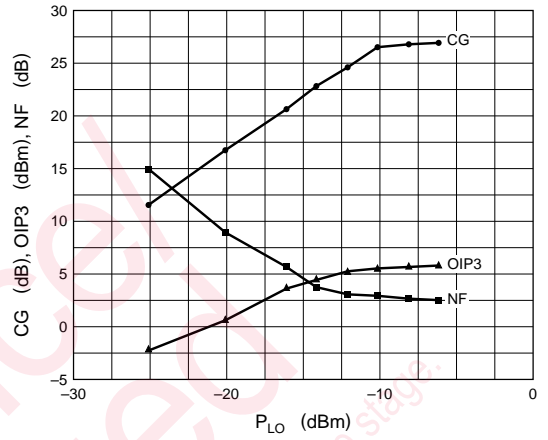
### ■ Measurement Circuit-2



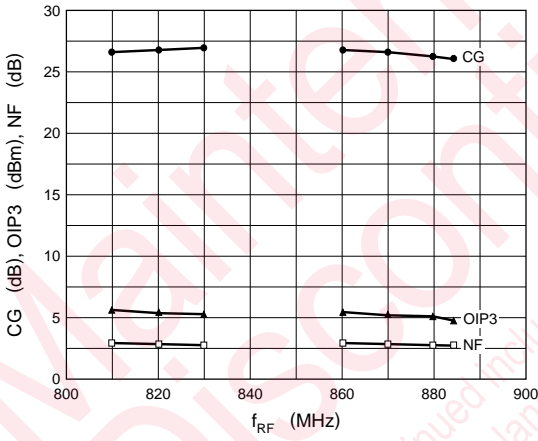
$P_{IF} - P_{RF}$



CG, OIP3, NF —  $P_{LO}$



CG, OIP3, NF —  $f_{RF}$



# Caution for Safety

 **DANGER**

## ■ This product contains Gallium Arsenide (GaAs).

GaAs powder and vapor are hazardous to human health if inhaled or ingested. Do not burn, destroy, cut, cleave off, or chemically dissolve the product. Follow related laws and ordinances for disposal. The product should be excluded from general industrial waste or household garbage.

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