

# GN01037B

## GaAs IC (with built-in ferroelectric)

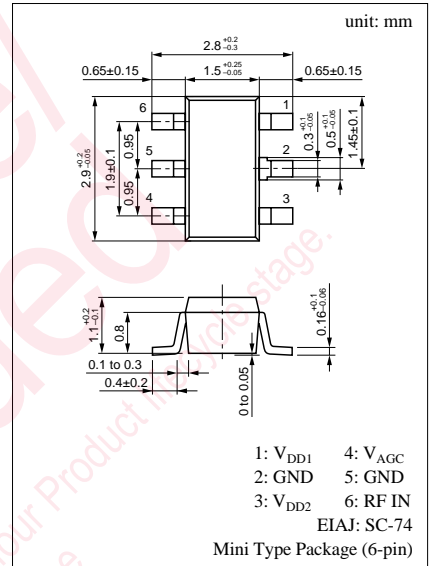
For the preamplifier of the transmitting section in a cellular phone  
Other communication equipment

### ■ Features

- Low-noise amplifier with AGC
- Operated by a single positive power supply
- $f = 0.9\text{GHz}$

### ■ Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Ratings	Unit
Power supply voltage	$V_{DD}$	8	V
Gate control voltage	$V_{AGC}$	0 to 2	V
Circuit current	$I_{DD}$	80	mA
Max input power	$P_{in}$	-5	dBm
Allowable power dissipation	$P_D$	0.2	W
Operating temperature	$T_{opr}$	-30 to +90	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +120	$^\circ\text{C}$



Marking Symbol: IC

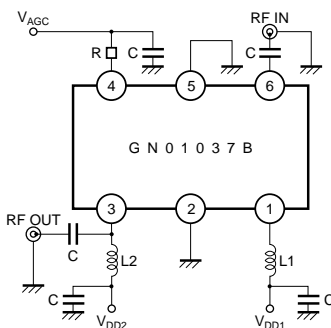
### ■ Electrical Characteristics ( $V_{DD} = 3\text{V}$ , $T_a = 25 \pm 2^\circ\text{C}$ )

Parameter	Symbol	Test method	Conditions	min	typ	max	Unit
Circuit current	$I_{DD}$		$V_{AGC} = 1.5\text{V}$	25		45	mA
Output power	$PO_1$	(1)	$V_{AGC} = 1.5\text{V}$ , $P_{in} = -15\text{dBm}$ , $f = 948\text{MHz}$	8	11		dBm
	$PO_2$		$V_{AGC} = 0\text{V}$ , $P_{in} = -15\text{dBm}$ , $f = 948\text{MHz}$		-29	-22	dBm
Modulation distortion	DM	(1), (2)	$V_{AGC} = 1\text{V}$ , $P_{in} = -15\text{dBm}$ , $f = 948\text{MHz}$ $\pm 50\text{kHz}$ Detuning, 21kHz Bandwidth	-55	-60		dBc

Test method (1): For measurement, use the circuit shown below.

(2): Design-guaranteed items.

### ■ Measurement Circuit



(Component values)

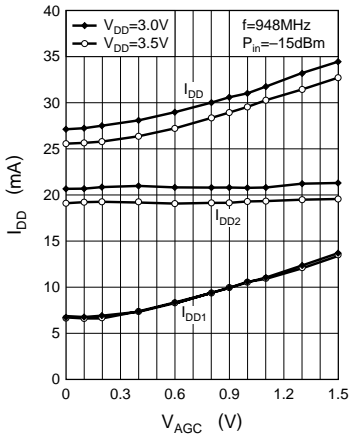
$C = 51\text{pF}$

$R = 5.6\text{k}\Omega$

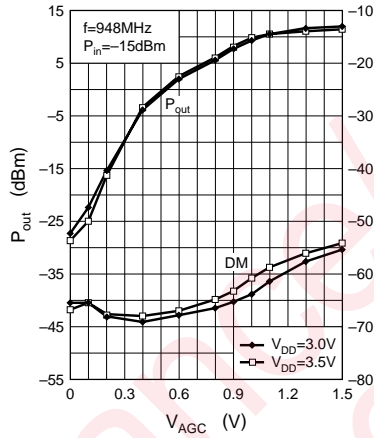
$L1 = 100\text{nH}$

$L2 = 27\text{nH}$

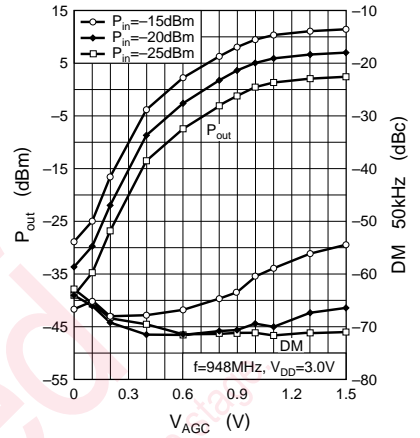
$I_{DD} - V_{AGC}, V_{DD}$



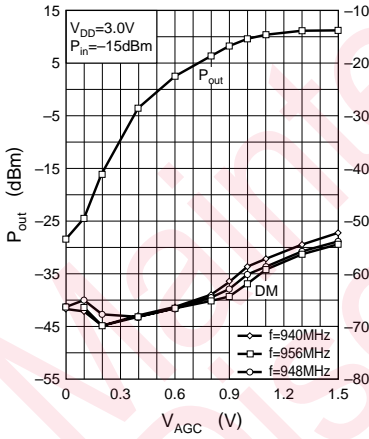
$P_{out}, DM - V_{AGC}, V_{DD}$



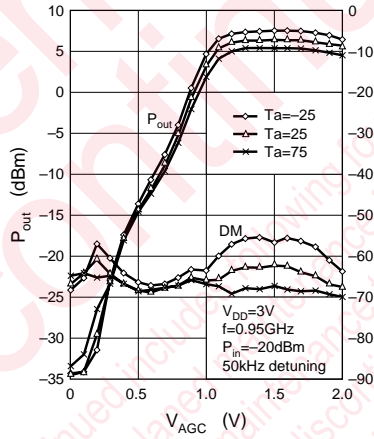
$P_{out}, DM - V_{AGC}, P_{in}$



$P_{out}, DM - V_{AGC}, f$



$P_{out}, DM - V_{AGC}, T_a$



# 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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