

# GN02023B

## GaAs IC (with built-in ferroelectric)

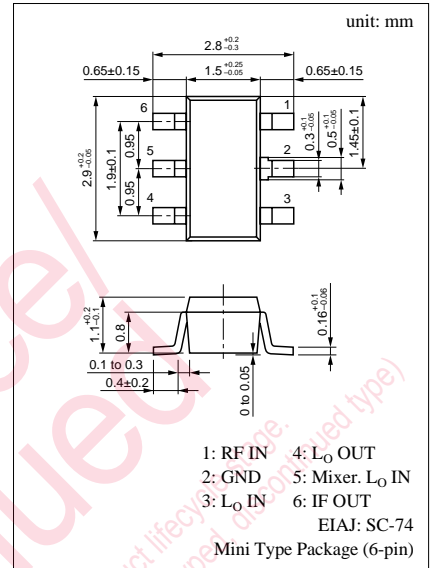
Mixer with local amplifier for cellular phone

### ■ Features

- Low distortion mixer
- Small package: Mini 6pin

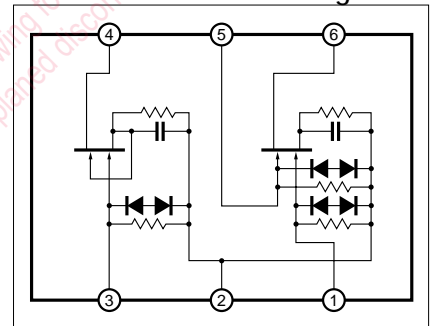
### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
RF section	V <sub>in</sub>	-3	V
	I <sub>in</sub>	1	mA
	P <sub>in</sub>	10	dBm
L <sub>O</sub> input section	V <sub>in</sub>	-3	V
	I <sub>in</sub>	1	mA
	P <sub>in</sub>	10	dBm
L <sub>O</sub> output section	V <sub>out</sub>	5	V
	I <sub>out</sub>	10	mA
Mix · L <sub>O</sub> section	V <sub>in</sub>	-3	V
	I <sub>in</sub>	1	mA
IF section	V <sub>out</sub>	5	V
	I <sub>out</sub>	10	mA
Overall	P <sub>D</sub>	0.1	W
	T <sub>ch</sub>	150	°C
	T <sub>stg</sub>	-55 to +150	°C



Marking Symbol: KH

Circuit-Function Block Diagram



### ■ Electrical Characteristics (Ta = 25 ± 3°C)

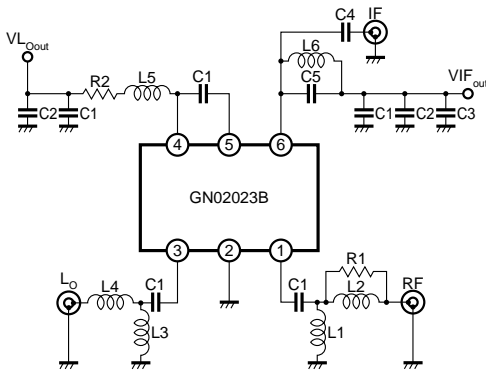
Parameter	Symbol	Conditions	min	typ	max	Unit
Mixer current	IMix	VIF <sub>out</sub> = 4V	5.05		10.25	mA
Local amplifier current	IL <sub>O</sub>	VL <sub>O</sub> out = 4V	1.95		3.95	mA
Conversion gain	CG <sub>1</sub> <sup>*1, 2, 3</sup>	VL <sub>O</sub> out = VIF <sub>out</sub> = 4V f <sub>RF</sub> = 880MHz, f <sub>IF</sub> = 45MHz	8	11		dB
Input third harmonics mutual modulation distortion	IIP3 <sup>*1, 2, 3</sup>	VL <sub>O</sub> out = VIF <sub>out</sub> = 4V f <sub>RF</sub> = 880MHz, 880.1MHz f <sub>IM3</sub> = 44.9MHz or 45.2MHz	0	3		dBm

\*1 Refer to measurement circuit.

\*2 Sampling guaranteed items. (AQL = 0.65%)

\*3 f<sub>L<sub>O</sub></sub> = 925MHz, P<sub>RF</sub> = -30dBm, P<sub>L<sub>O</sub></sub> = -10dBm

## ■ Measurement Circuit



(Component values)

$R1 = 560\Omega$	$L1 = 18\text{nH}$	$C1 = 100\text{pF}$
$R2 = 12\Omega$	$L2 = 33\text{nH}$	$C2 = 1000\text{pF}$
	$L3 = 14\text{nH}$	$C3 = 10000\text{pF}$
	$L4 = 22\text{nH}$	$C4 = 18\text{pF}$
	$L5 = 10\text{nH}$	$C5 = 27\text{pF}$
	$L6 = 270\text{nH}$	

Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.  
(planned maintenance type, maintenance type, planned discontinued type, discontinued type)

# 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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