HA22039

GaAs IC
Low Distortion Mixer for Micro Wave Application

HITACHI

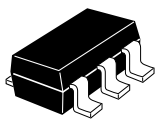
ADE-207-271 (Z)
Preliminary
1st. Edition
August 1999

Features

- Suitable for low distortion of Micro Wave Application
- Low voltage and low current operation (3V, 7mA typ.)
- Low insertion loss (1.0 dB typ. @800MHz)
- Small surface mount package (MPAK–6)

Outline

MPAK—6



This Device si sensitive to Electro Static Discharge.
An Adequate handling procedure is requested.

CAUTION
This product ues GaAs. Since dust or fume of GaAs is highly poisonous to human body, please do not treat them mechanically in the manner which might expose to the Aer. And it should never be thrown out with general industrial or domestic wastes.

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Supply voltage	Vdd	5	V
Maximum current	Idd	60	mA
Power dissipation	Pd	100	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +125	°C
Operation temperature	Topr	–30 to +85	°C

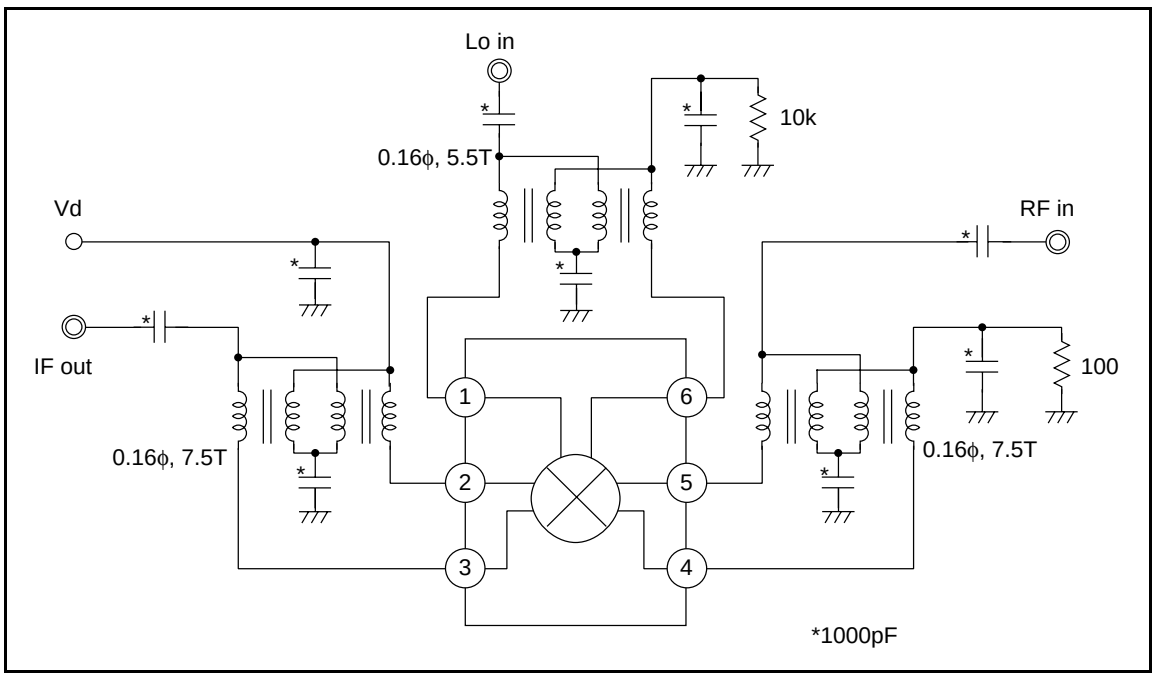
Electrical Characteristics (Ta = 25°C, Vdd = 3V, Idd = 7mA)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Insertion loss	CL	0	1	3	dB	f = 800 MHz, PRF = -10dBm, Plo = 0dBm

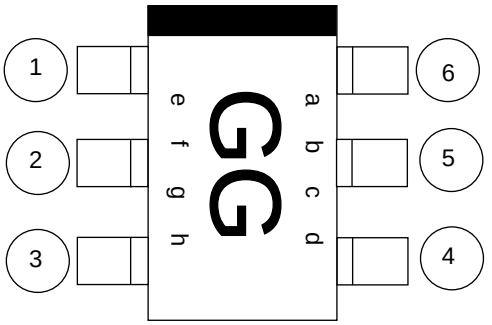
Typical Performance (Ta = 25°C, Vdd = 3V, Idd = 7mA)

Item	Symbol	Typ	Unit	Test Conditions
3rd order input intercept point	IP3in	12	dBm	f = 800 MHz, PRF = -10dBm, Plo = 0dBm
Noise Figure (DSB)	NF	7	dB	

Block Diagram



Pin Arrangement

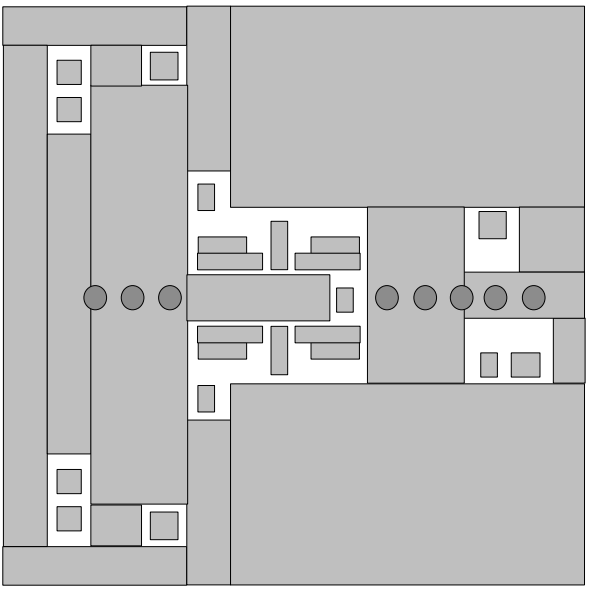


Top View

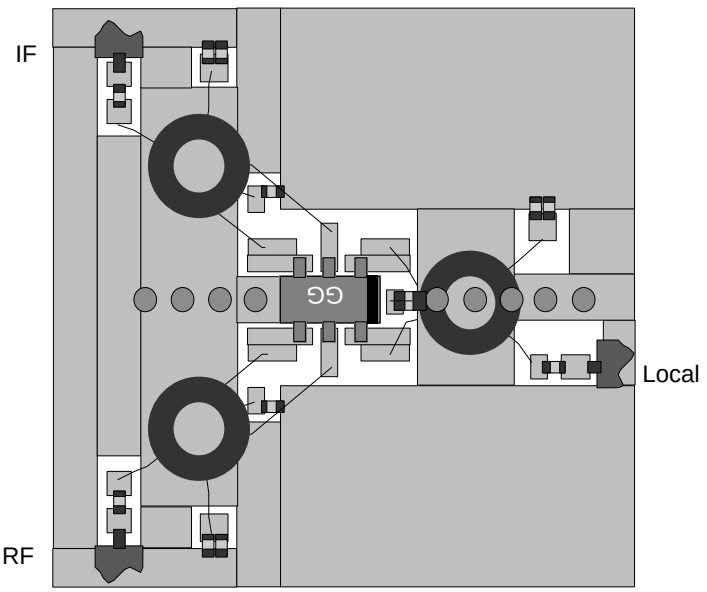
GG : Mark Type
a to d : Year Code (variable)
e to f : Monthly Code (variable)

Pin No.	Pin name	Function
1	G1	Gate
2	D1	Drain
3	D2	Drain
4	S2	Source
5	S1	Source
6	G2	Gate

Pattern Layout



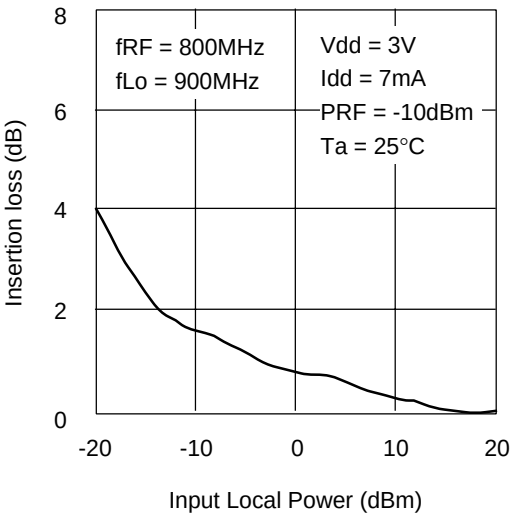
Front Side view of PCB Pattern



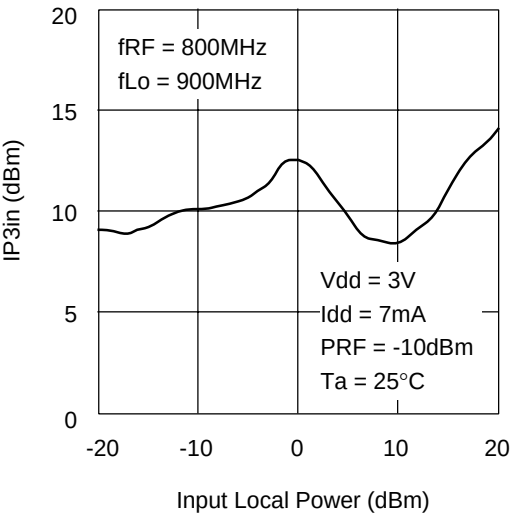
Front Side view of Part Layout

Main Characteristics

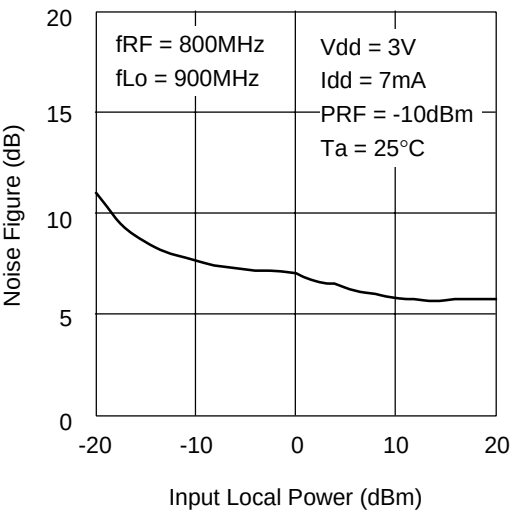
Insertion loss vs. Input Power



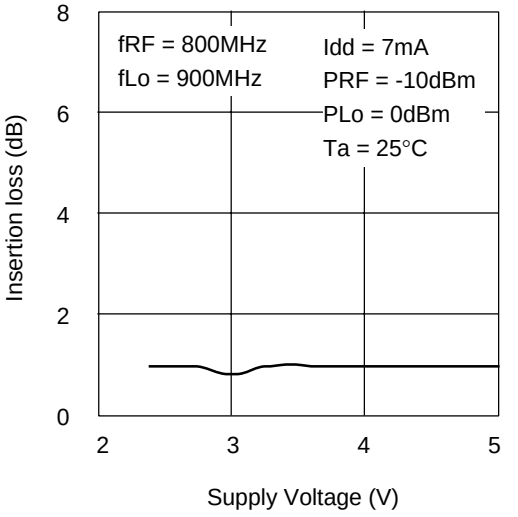
IP3in vs. Input Power



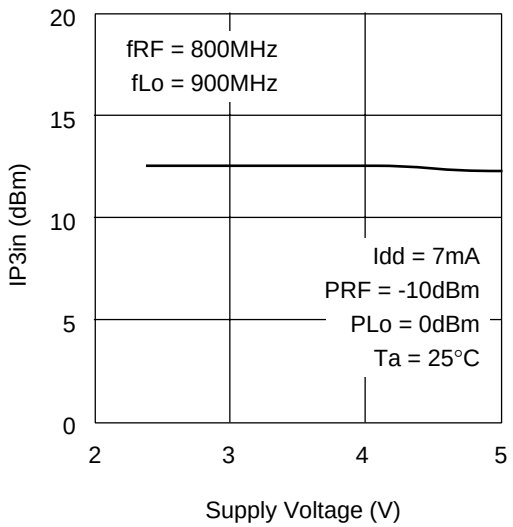
NF vs. Input Power



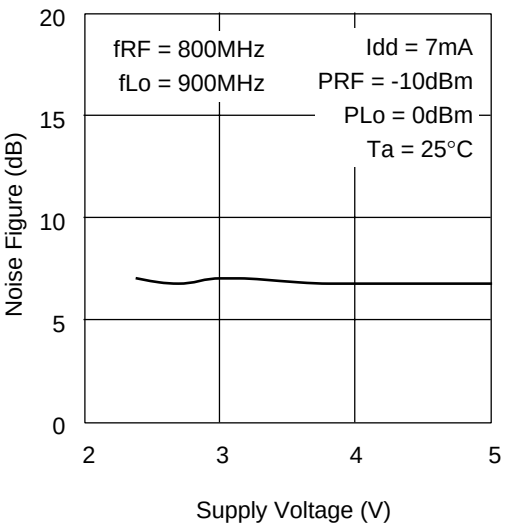
Insertion loss vs. Supply Voltage



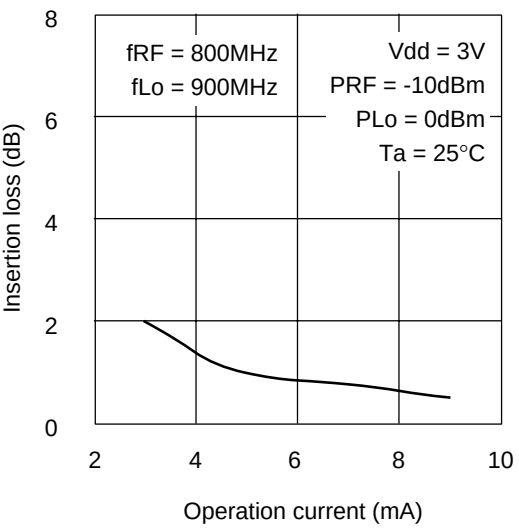
IP3in vs. Supply Voltage



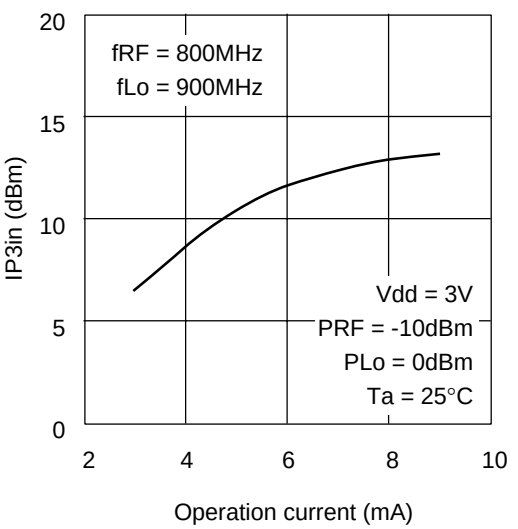
NF vs. Supply Voltage



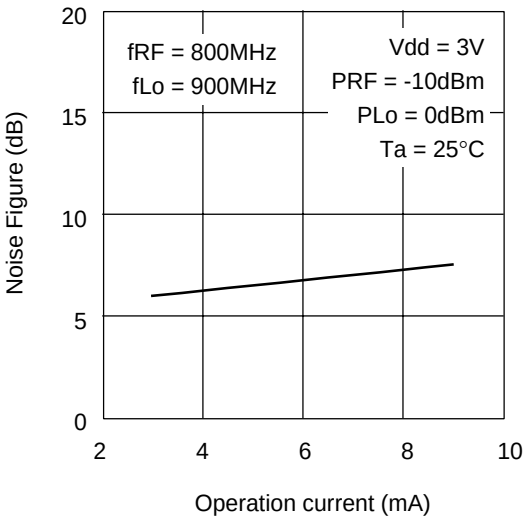
Insertion loss vs. Operation current



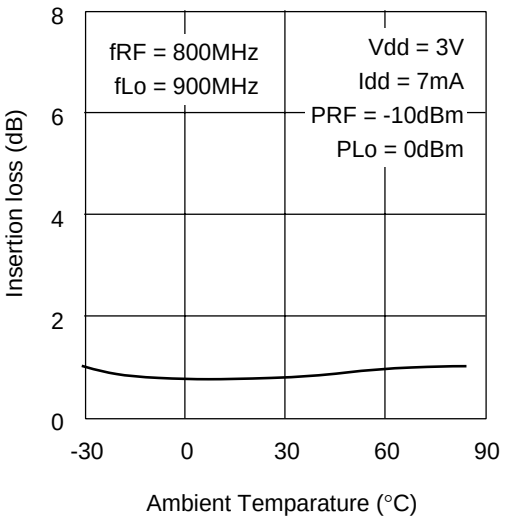
IP3in vs. Operation current



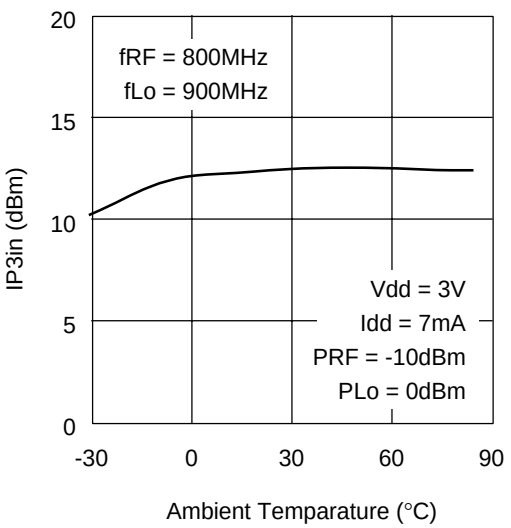
NF vs. Operation current



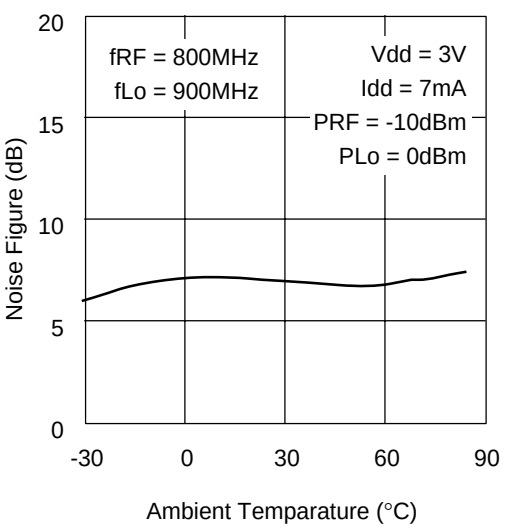
Insertion loss vs. Temparature

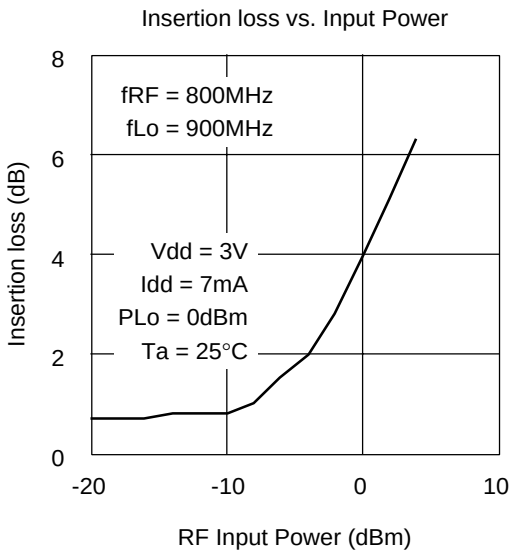


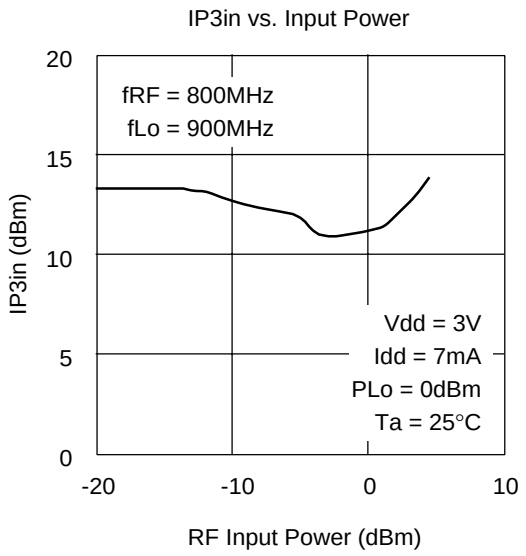
IP3in vs. Temparature



NF vs. Temparature

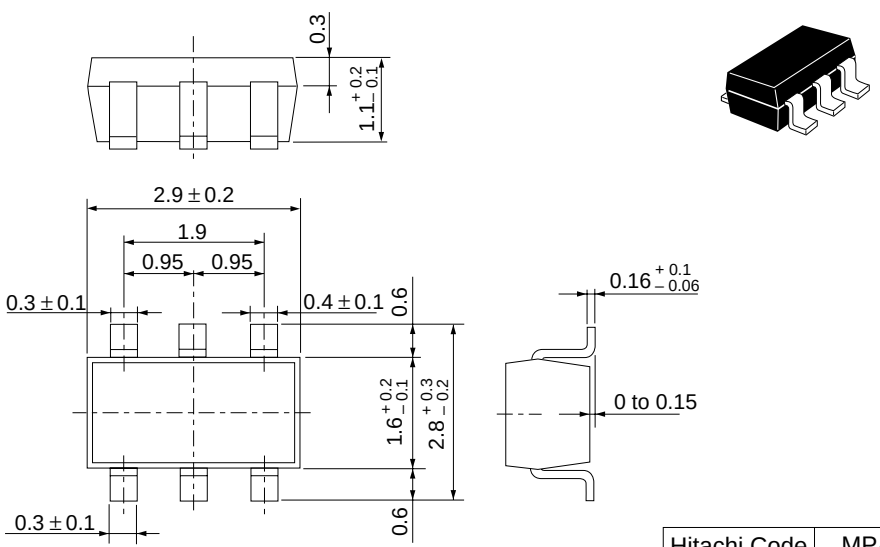






Package Dimentions

Unit: mm



Hitachi Code	MPAK–6
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JEDEC	—

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HITACHI

Hitachi, Ltd.
Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL
NorthAmerica : http:semiconductor.hitachi.com/
Europe : http://www.hitachi-eu.com/hel/ecg
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Japan : http://www.hitachi.co.jp/Sicd/indx.htm

For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose,CA 95134
Tel: <1> (408) 433-1990
Fax: <1>(408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building. No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX