

## Receiving Mixer

### Description

The CXG1034TN is a receiving mixer MMIC. This IC is designed using the Sony's GaAs J-FET process.

### Features

- Low distortion Input IP3=+1.5 dBm (Typ.)
- Low LO input power operation  $P_{LO}=-15$  dBm
- RF, LO input matching circuit
- Single 3 V power supply operation
- 10-pin TSSOP package

### Function

Frequency conversion

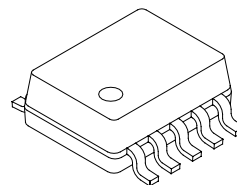
### Applications

Japan digital cordless telephones (PHS)

### Structure

GaAs J-FET MMIC

10 pin TSSOP (Plastic)



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

• Supply voltage	$V_{DD}$	4.5	V
• Input power	$P_{IN}$	+5	dBm
• Operating temperature	$T_{opr}$	-35 to +85	°C
• Storage temperature	$T_{stg}$	-65 to +150	°C

### Operating Conditions

Supply voltage	$V_{DD}$	3.0	V
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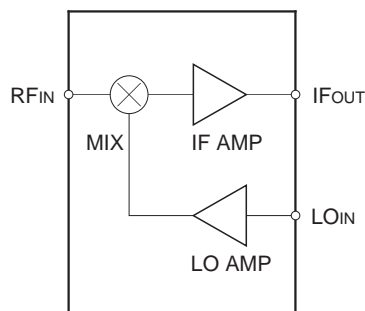
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**Electrical Characteristics**

$V_{DD}=3.0\text{ V}$ ,  $f_{RF}=1.9\text{ GHz}$ ,  $f_{LO}=1.66\text{ GHz}$ ,  $P_{LO}=-15\text{ dBm}$ , when  $50\ \Omega$  IF output matching; unless otherwise specified  
( $T_a=25\text{ }^\circ\text{C}$ )

Item	Symbol	Min.	Typ.	Max.	Unit	Measurement condition
Current consumption	$I_{DD}$	—	5	7	mA	When no signal
Conversion gain	$G_c$	7	8	10	dB	
Noise figure	NF	—	8.5	10.5	dB	
Input IP3	IIP3	-1.5	1.5	—	dBm	
LO to RF leak level	PLK	—	-19	-14	dBm	
RF input VSWR	$V_{SWR_{RF}}$	—	1.5	2.5	—	
LO input VSWR	$V_{SWR_{LO}}$	—	2	3.5	—	

**Block Diagram**

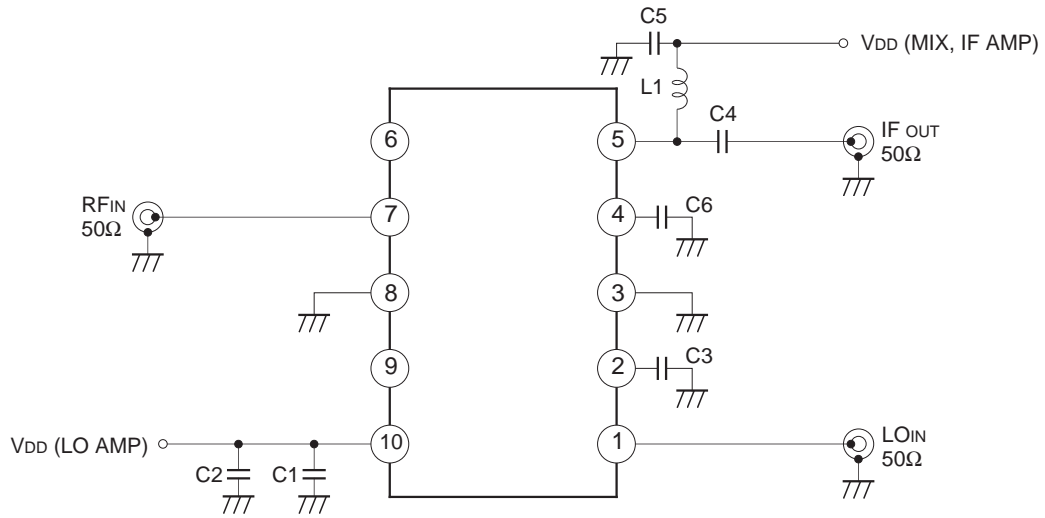


**Pin Configuration**



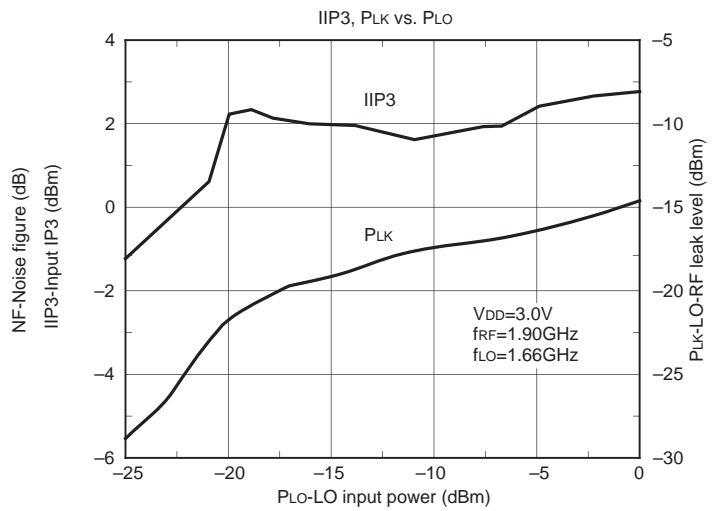
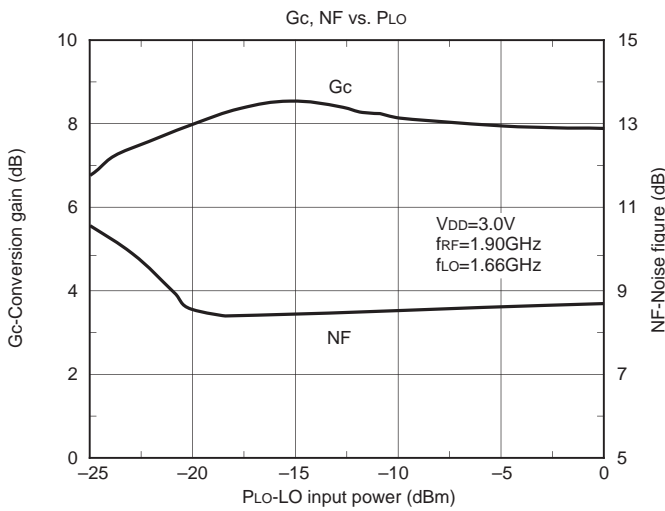
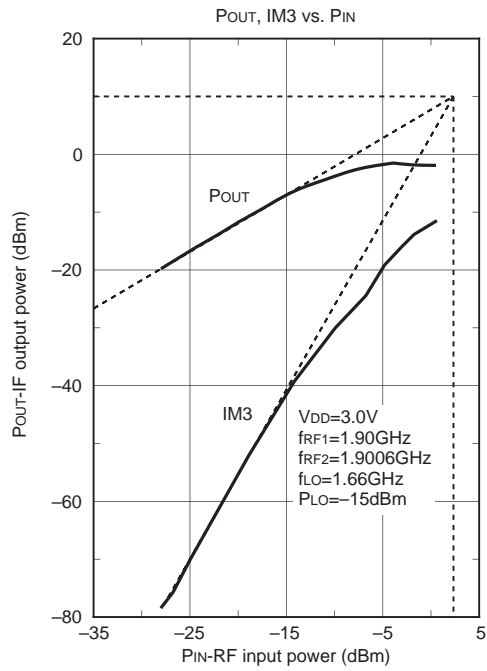
10-pin TSSOP (Plastic)

Recommended Evaluation Circuit

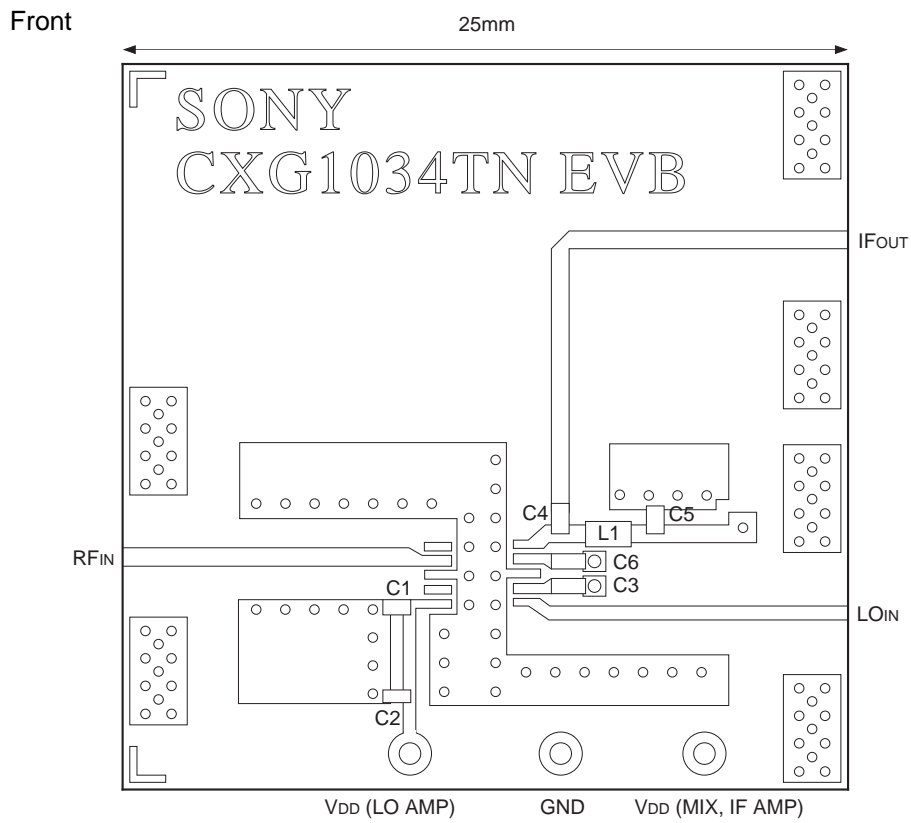


L1	56 nH
C1	18 pF
C2	1000 pF
C3	18 pF
C4	8 pF
C5	1000 pF
C6	0.1 μF

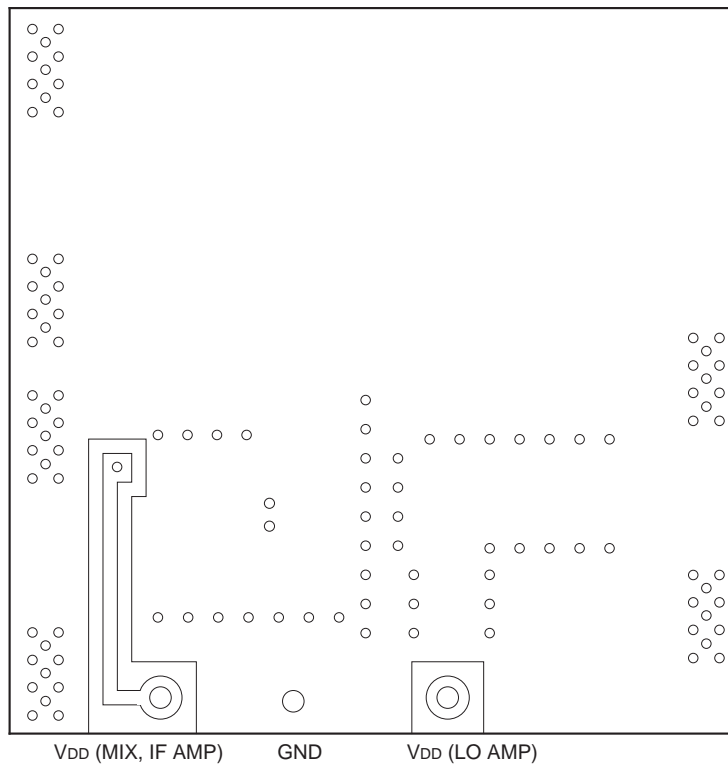
Example of Representative Characteristics (Ta=25 °C)



Recommended Evaluation Board



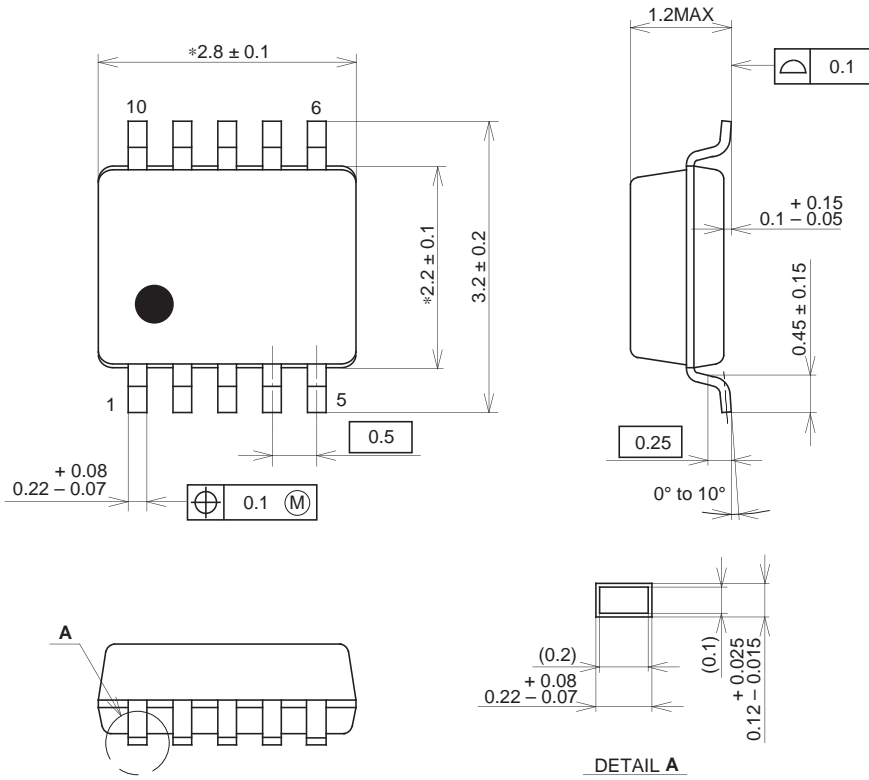
Back



Glass fabric-base 4-layer epoxy board (thickness: 0.3 mm × 2)  
GND for the 2nd and 3rd layers

Package Outline Unit : mm

10PIN TSSOP(PLASTIC)



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

PACKAGE STRUCTURE

SONY CODE	TSSOP-10P-L01
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER PLATING
LEAD MATERIAL	COPPER ALLOY
PACKAGE MASS	0.02g