

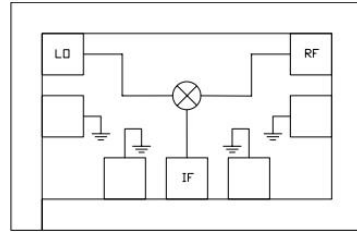
Performance characteristics

- RF/LO band: 24GHz ~ 40GHz
- IF band: DC-10GHz
- Frequency conversion loss: 8.5 dB
- RF-IF isolation: 18dB
- LO-IF isolation: 50dB
- LO-RF isolation: 45dB
- Local oscillator power: 13dBm

Typical application

- Base station communication
- Wireless infrastructure
- Automotive electronics
- Instruments and meters

Functional Diagram



Overview

CW329 is a GaAs MMIC passive double balanced mixer, with RF/LO frequency covering 24-40GHz, IF frequency covering DC-10GHz, conversion loss less than 9dB, RF-IF isolation greater than 15dB, LO-IF isolation greater than 35dB, LO-RF isolation greater than 42dB, and typical LO input power of 13dBm.

Electrical performance table (TA=+25 °C, IF=1GHz, LO=13dBm)

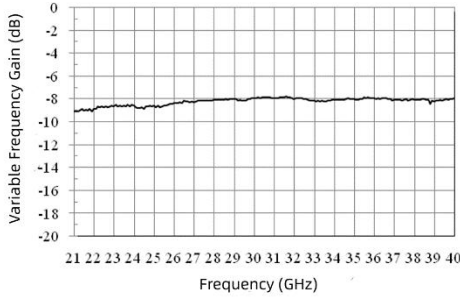
Indicators	Minimum value	Typical value	Maximum value	Unit
Radio frequency	24-40			GHz
Local oscillator frequency	24-40			GHz
Intermediate frequency	DC-10			GHz
Frequency conversion loss	8	8.5	9	dB
RF-IF isolation	15	18	22	dB
LO-IF isolation	35	50	64	dB
LO-RF isolation	42	45	48	dB
P1dB (input)	11	12	13	dBm

Use parameters (exceeding any of the above maximum limits may cause permanent damage)

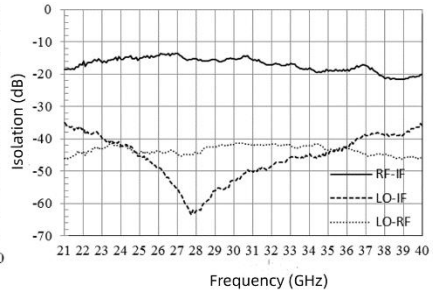
RF/IF power	25dBm
Local oscillator power	23dBm
Storage temperature	-65 °C-150 °C
Operating temperature	-55 °C-125 °C

Test curve

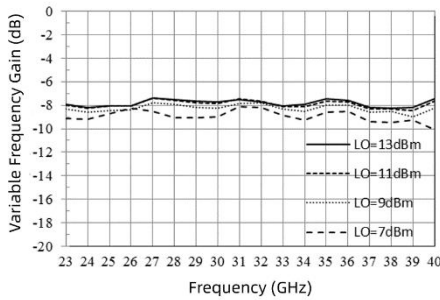
Frequency conversion loss curve @ LO=13dBm, IF frequency 1GHz



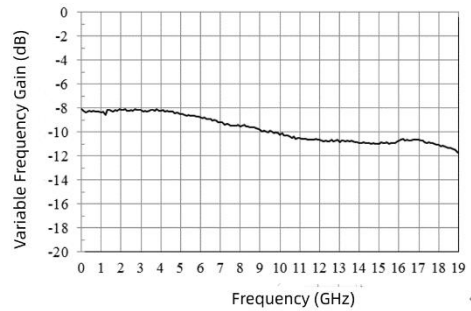
Isolation @ LO=13dBm, IF 1GHz



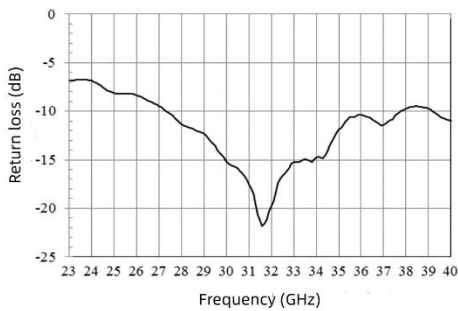
Frequency conversion loss curve @ IF frequency 1GHz



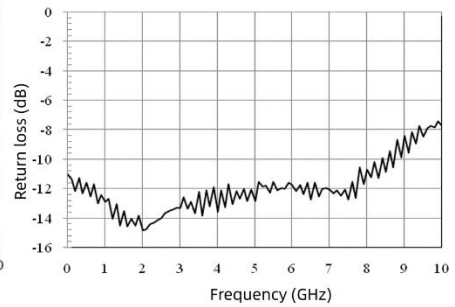
IF bandwidth @ LO=40GHz, LO=13dBm



RF return loss



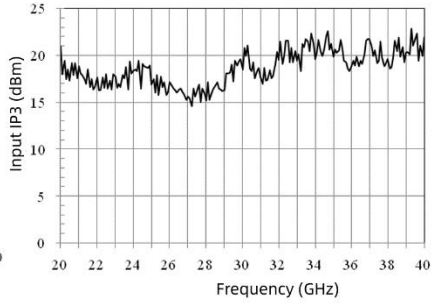
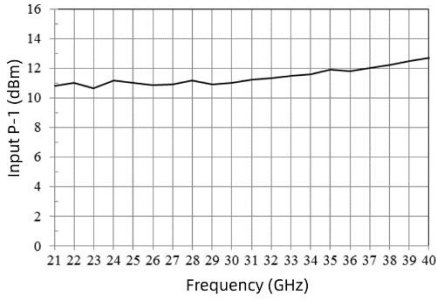
IF return loss



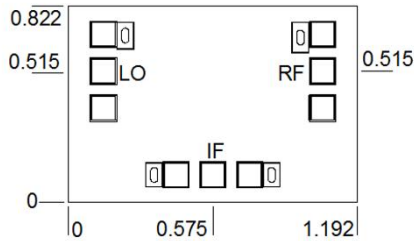
Test

Enter P-1 @ LO=13dBm

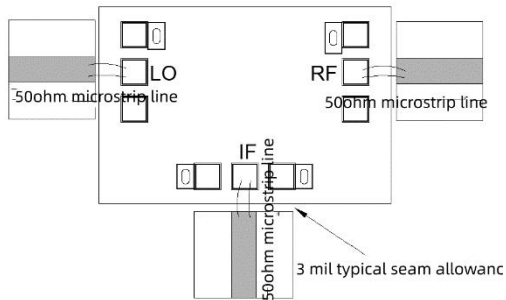
Enter IP3 @ LO=13dBm



Dimension drawing: (in mm)



Suggested assembly drawing



Instructions for use

Note: There are DC blocking capacitors in input and output

Storage: The chip must be placed in a container with electrostatic protection function and stored in nitrogen environment.

Cleaning treatment: Bare chips must be operated in a clean environment, and it is forbidden to use liquid cleaner to clean the chips.

Electrostatic protection: Please strictly abide by ESD protection requirements to avoid electrostatic damage of devices.

General operation: Please use vacuum chuck or precision pointed tweezers to take the chip. Avoid touching the chip surface with tools or fingers during operation.

Mounting operation: The chip can be installed by AuSn solder eutectic welding or conductive adhesive bonding process. The mounting surface must be clean and flat.

Bonding operation: Two bonding wires (recommended diameter 25um gold wire) are used for input and output, and the length of bonding wire is less than 250um. It is recommended to use as little ultrasonic energy as possible. Bonding starts at the pad point on the chip and ends at the package (or substrate).