V0.2
2206

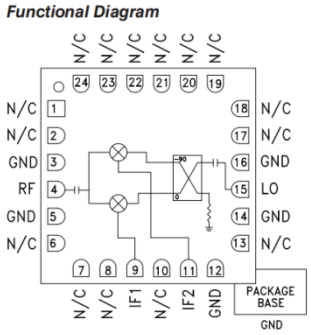
Performance characteristics

- RF/LO band: 4GHz ~ 8.5 GHz
- IF band: DC-1GHz
- Frequency conversion loss: 10.5 dB
- RF-IF Isolation: 30dB
- LO-IF isolation: 20dB
- LO-RF Isolation: 40dB
- Mirror frequency rejection: 28dB
- Local oscillator power: 15dBm
- Package size: 4× 4mm

Typical application

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

Functional block diagram



Overview

CW525SP4 is a GaAs MMIC I/Q mixer, with RF/LO frequency covering 4-8.5 GHz and IF frequency covering DC-3. 5GHz respectively, conversion loss less than 11dB, mirror frequency rejection greater than 25dB, RF-IF isolation greater than 24dB, LO-IF isolation greater than 14dB, LO-RF isolation greater than 35dB, and typical LO input power of 15dBm.

Electrical performance table (TA=+25 ℃, IF=0. 1GHz, LO=15dBm)

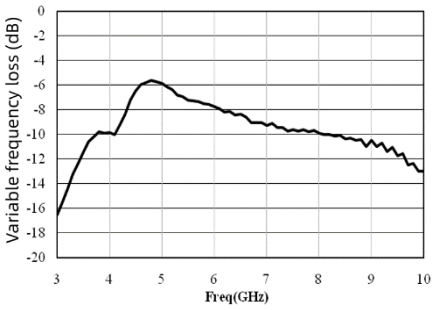
Indicators	Minimum value	Typical value	Maximum value	Unit
Radio frequency	4-8.5			GHz
Local oscillator frequency	4-8.5			GHz
Intermediate frequency	DC-3. 5			GHz
Frequency conversion loss	6	8	10.5	dB
RF-IF isolation	-	30	-	dB
LO-IF isolation	-	20	-	dB
LO-RF isolation	-	40	-	dB
P1dB (input)	-	12	-	dBm

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

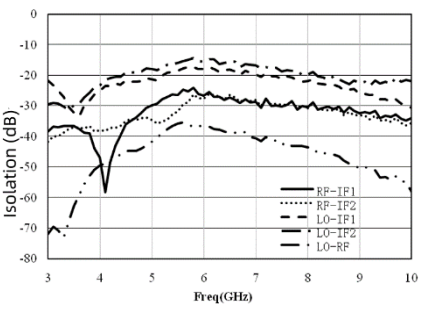
RF/IF power	20dBm
Local oscillator power	27dBm
Storage temperature	-65 ℃-150 ℃
Operating temperature	-55 ℃-85 ℃

Test curve

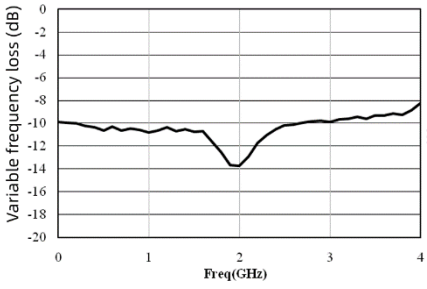
Frequency conversion loss curve @ LO=15dBm, IF frequency 0.1 GHz



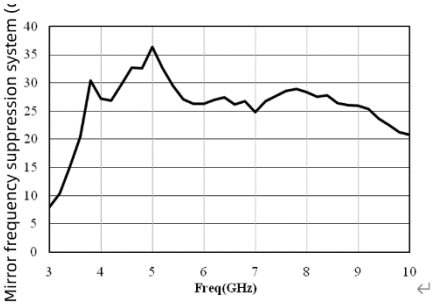
Isolation @ LO=15dBm, IF 0.1 GHz



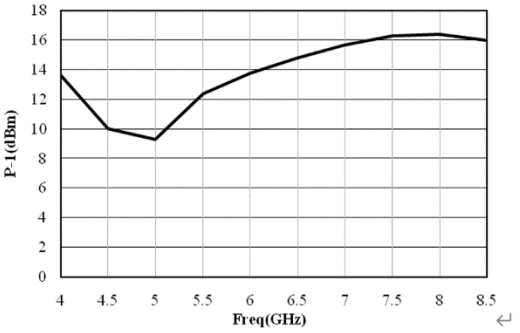
IF bandwidth @ LO=8GHz, LO=15dBm



Mirror frequency rejection



Enter P-1



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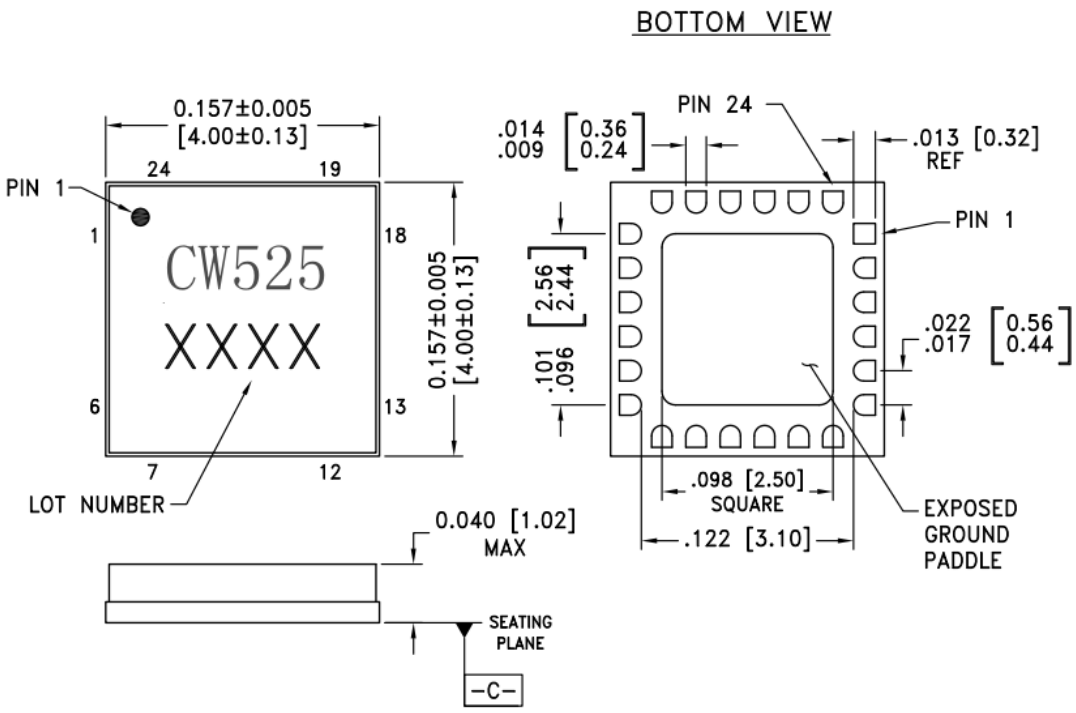
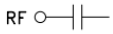
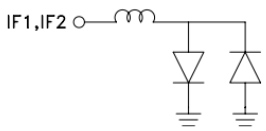
Outline drawing: (unit： mm)

Outline Drawing



NOTES:
1. PACKAGE BODY MATERIAL Plastic packaging
2. LEAD AND GROUND PADDLE PLATING: 30 - 80 MICROINCHES GOLD OVER 50 MICROINCHES MINIMUM NICKLE
3. DIMENSIONS ARE IN INCHES [MILLIMETERS]
4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE
5. PACKAGE WARP SHALL NOT EXCEED 0.05mm DATUM
6. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND

Pin Description

Pin Number	Function	Description	Interface Schematic
1, 2, 6 - 8, 10, 13, 17 - 24	N/C	No connection required. These pins may be connected to RF/DC ground without affecting performance.	
3, 5, 12, 14, 16	GND	These pins and package bottom must be connected to RF/DC ground.	
4	RF	This pin is AC coupled and matched to 50 Ohms from 4 to 8.5 GHz.	
9	IF1	This pin is DC coupled. For applications not requiring operation to DC, this port should be DC blocked externally using a series capacitor whose value has been chosen to pass the necessary IF frequency range. For operation to DC, this pin must not source/sink more than 3mA of current or part non-function and possible part failure will result.	
11	IF2		
15	LO	This pin is AC coupled and matched to 50 Ohms from 4 to 8.5 GHz.