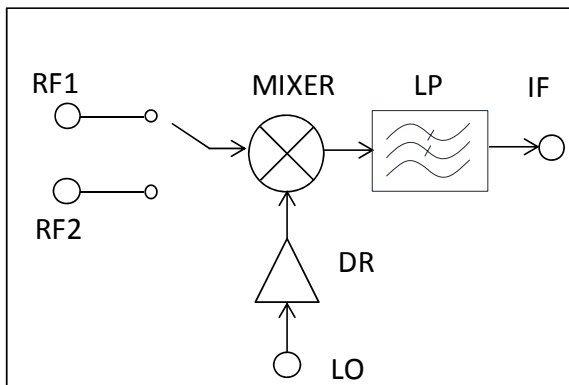


Features

RF Frequency: 8~12GHz
 LO Frequency: 10.8~14.8GHz
 IF Frequency: 2.8GHz
 Conversion Loss: 5dB
 Input Power for 1dB compression(dBm): 18dBm
 LO Input Power: -3dBm
 Supply Voltage: +5V@110mA

Functional Diagram



General Description

The HG116V-1 is a GaAs pHEMT MMIC downconverter which is operating between 8 and 12GHz. It includes amplifier, low pass filter, switch and mixer. The downconverter features IF Frequency is 2.8GHz, LO Frequency is 10.8~14.8GHz, Conversion Loss is 5dB, Input Power for 1dB compression is 18 dBm.

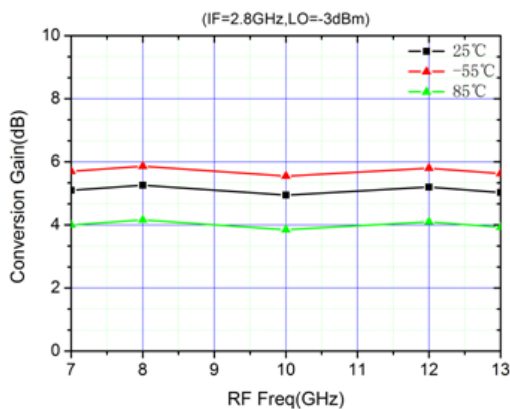
Electrical Specifications

($T_A=25^\circ\text{C}$, $IF=2.8\text{GHz}$, $V_{dd}=+5\text{V}$, $V_s=-5\text{V}$)

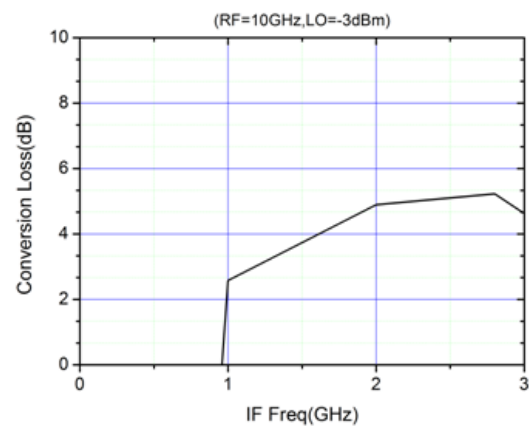
Parameter	Min.	Typ.	Max.
Freq. RF (GHz)	8~12		
Freq. LO (GHz)	10.8~14.8		
Freq. IF(GHz)	2.8		
Conversion Loss(dB)	—	5	—
Input Power for 1dB compression(dBm)	—	18	—
RF Return Loss	—	17	—
IF Return Loss	—	22	—
LO to RF Isolation(dB)	14	—	—
LO to IF Isolation(dB)	48	—	—
RF to IF Isolation(dB)	57	—	—
RF to LO Isolation(dB)	52	—	—
RF1 to RF2 Isolation(dB)	—	42	—
LO Return Loss	—	15	—

Measured Performance

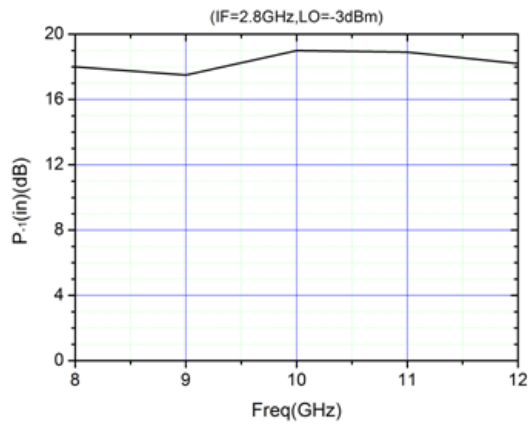
Conversion Loss



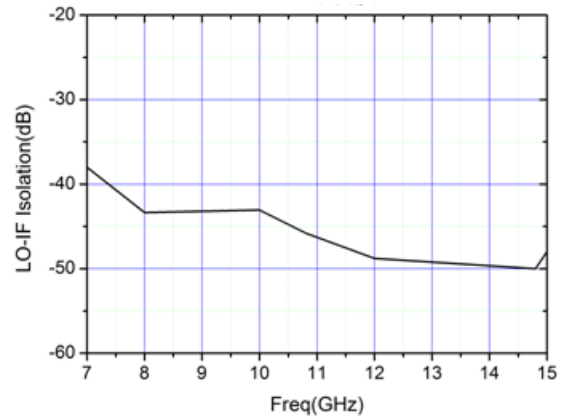
Conversion Loss



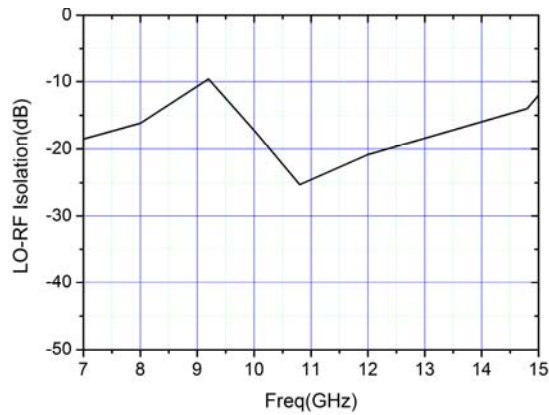
Input P1dB



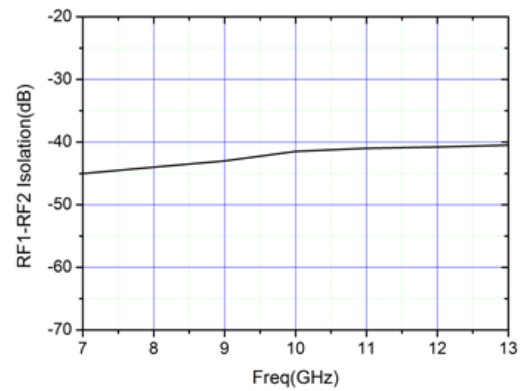
LO-IF Isolation



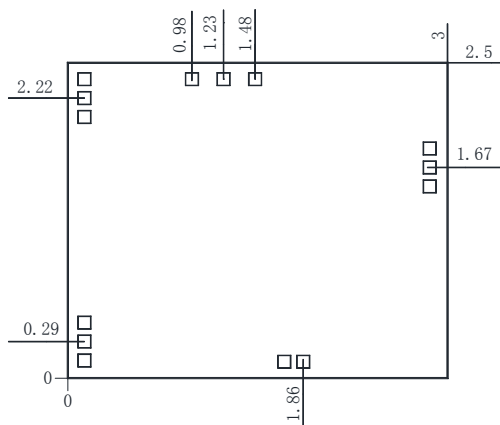
LO-RF Isolation



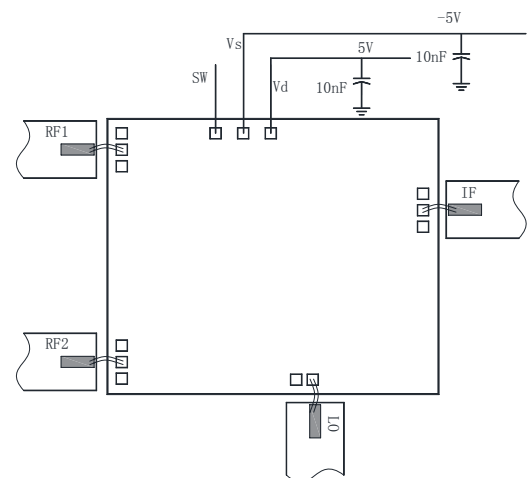
RF1-RF2 Isolation



Outline Drawing (mm)



Assembly Diagram



Absolute Maximum Ratings

RF Input Power	+15dBm
Operating Voltage	+5.5V
Operating Temperature	-55℃～85℃
Storage Temperature	-65℃～150℃

Notes:

1. The chip should be stored in a dry and nitrogen environment, and used in a clean environment.
2. GaAs material is brittle, can not touch the surface of the chip, must be careful when using.
3. The chip is welding with conductive adhesive or alloy (alloy temperature should not exceed 300℃, and no more than 30 sec.), and should make it fully grounded.
4. The chip microwave port and substrate gap is not exceeding 0.05mm, with $\Phi 25\mu\text{m}$ double gold wire bonding, suggested length of gold wire 250～400 μm .
5. Chip microwave RF and IF port without DC blocking capacitor, LO port with one.
6. The chip is sensitive to static electricity, and should be protected against static electricity during storage and use.