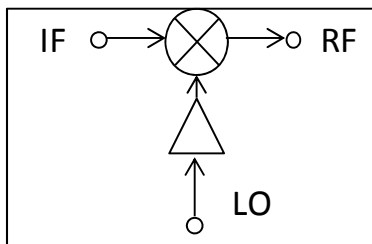


### Features

- RF Frequency: 28~30GHz
- LO/3 Frequency: 27~31GHz
- IF Frequency: DC~3GHz
- LO input Power: -5~5dBm
- Conversion Loss: 10 dB
- Supply Voltage: 5V@46mA
- Chip Size: 2mm×1.3mm×0.1mm

### Functional Diagram



### General Description

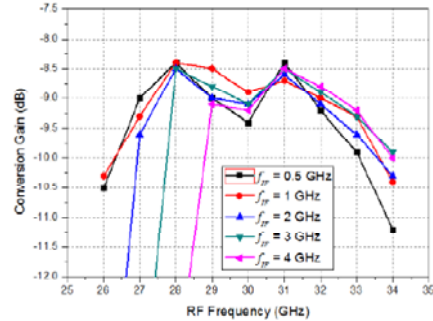
The HG118U is a GaAs pHEMT MMIC upconverter which is operating between 28 and 30GHz. The upconverter features LO Frequency is 27~31GHz, RF Frequency is 28~3-GHz, IF Frequency is between DC and 3GHz, Conversion Loss is 10 dB.

### Electrical Specifications( $T_A=25\text{ }^\circ\text{C}$ , $V_d=5\text{V}$ )

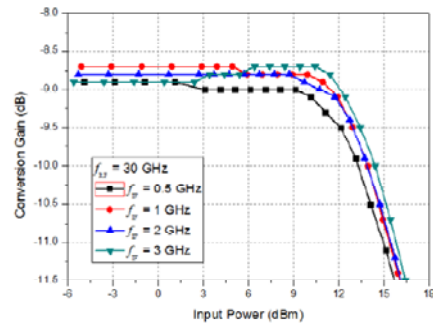
Parameter	Min.	Typ.	Max.
Freq. RF (GHz)	28~30		
Freq. LO/3 (GHz)	27~31		
Freq. IF(GHz)	DC~3		
Conversion Gain(dB)	—	10	—
LO to RF Isolation(dB)	—	40	—
IF input power(dBm)	-5	0	5

### Measured Performance

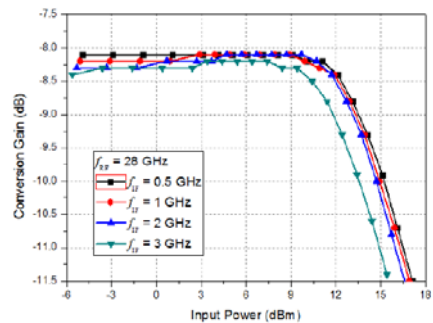
#### Conversion Loss



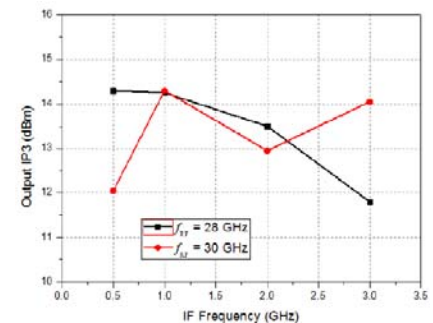
#### Conversion Loss vs. LO Power@30GHz



#### Conversion Loss vs. LO Power@28GHz



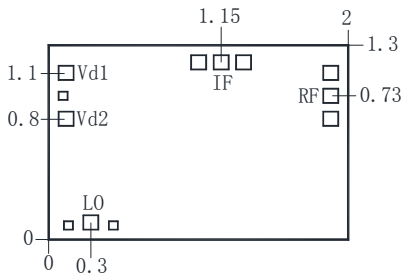
#### Output IP3



### Absolute Maximum Ratings

Supply Voltage	+5.5V
RF Input Power	+10dBm
Operating Temperature	-55°C ~ 125°C
Storage Temperature	-65°C ~ 150°C

### Outline Drawing (mm)



### 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°C, 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 $\mu\text{m}$ .
5. Chip microwave port without DC blocking capacitor.
6. The chip is sensitive to static electricity, and should be protected against static electricity during storage and use.