

## **IQ Mixer**

**RF:4-8 GHz/LO:4-8 GHz/IF:DC-2 GHz****Model: TLIQ-4G8G-02-S**

TLIQ-4G8G-02-S is an ultra-broadband mixer spanning 4 to 8 GHz on the RF and LO ports with an IF from DC to 2 GHz. Up to 30 dBc of image rejection is available due to the excellent phase and amplitude balance of its on-chip LO quadrature hybrid.

### **Features:**

- RF/LO coverage : 4-8 GHz
- IF operation : DC-2 GHz
- Conversion loss: 9dB Typ
- LO power : 16dBm Typ
- Image Rejection : 30dBc Typ

### **Applications:**

- Single Sideband and Image Rejection Mixing
- IQ Modulation / Demodulation
- Vector Amplitude Modulation
- Band Shifting

### **Electrical Characteristics:**

| Parameter                         | Min | Typ | Max | Units |
|-----------------------------------|-----|-----|-----|-------|
| RF Frequency                      | 4   |     | 8   | GHz   |
| LO Frequency                      | 4   |     | 8   | GHz   |
| LO-Input power                    |     | 16  |     | dBm   |
| IF Frequency                      | DC  |     | 2   | GHz   |
| Image Rejection                   |     | 30  |     | dBc   |
| Conversion Loss                   |     | 9   |     | dB    |
| Input 1 dB Gain Compression Point |     | 14  |     | dBm   |
| LO to IF Isolation                |     | 30  |     | dB    |
| LO to RF Isolation                |     | 50  |     | dB    |
| RF to IF Isolation                |     | 40  |     | dB    |

## Mechanical Specifications:

| Parameter    | Value                           | Units |
|--------------|---------------------------------|-------|
| RF Connector | SMA Female                      |       |
| LO Connector | SMA Female                      |       |
| IF Connector | SMA Female                      |       |
| Size         | 17.5*17.5*10(Without Connector) | mm    |
| Weight       | 100                             | g     |

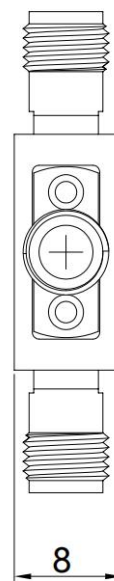
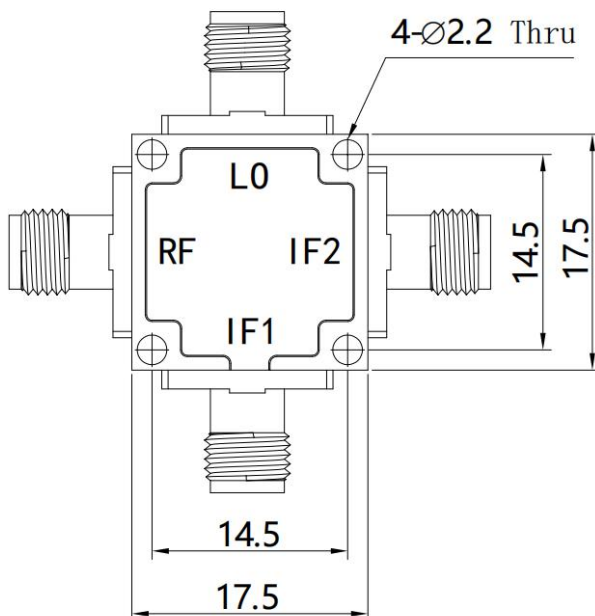
## Absolute Maximum Ratings:

| Parameter                   | Value                |
|-----------------------------|----------------------|
| Power Handling, at any Port | +20 dBm              |
| ESD sensitivity (HBm)       | Class 0, passed 150V |

## Outline Drawing:

Unit:mm

## Regulatory Compliance:



ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

## Environmental Conditions:

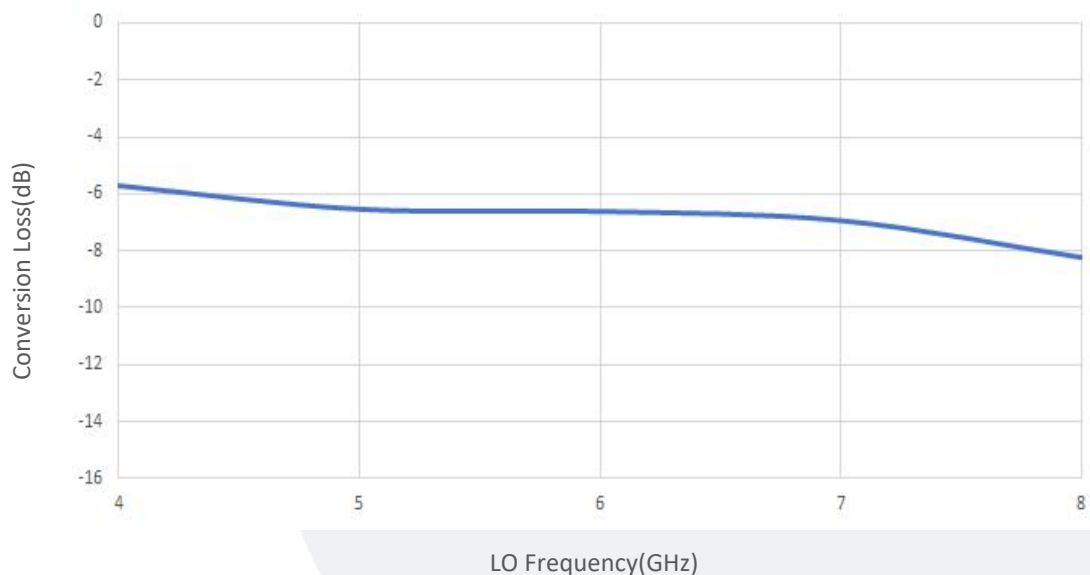
| Parameter                       | Min                                                 | Typ | Max  | Units |
|---------------------------------|-----------------------------------------------------|-----|------|-------|
| Operating Temperature           | -45                                                 |     | +85  | °C    |
| Non-operating Temperature       | -55                                                 |     | +100 | °C    |
| Relative humidity               |                                                     | 95  |      | %     |
| Altitude                        | 10,000                                              |     |      | feet  |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis |     |      |       |
| Shock(non operating)            | 20G for 11msc half sin wave,3 axis both directions  |     |      |       |

## Ordering Information:

| Base Number    | Description                                                    | Revision |
|----------------|----------------------------------------------------------------|----------|
| TLIQ-4G8G-02-S | Image Rejection or I/Q Mixer<br>RF:4-8GHz,LO:4-8GHz,IF:DC-2GHz | Rev.1.1  |

## Typical Performance Data:

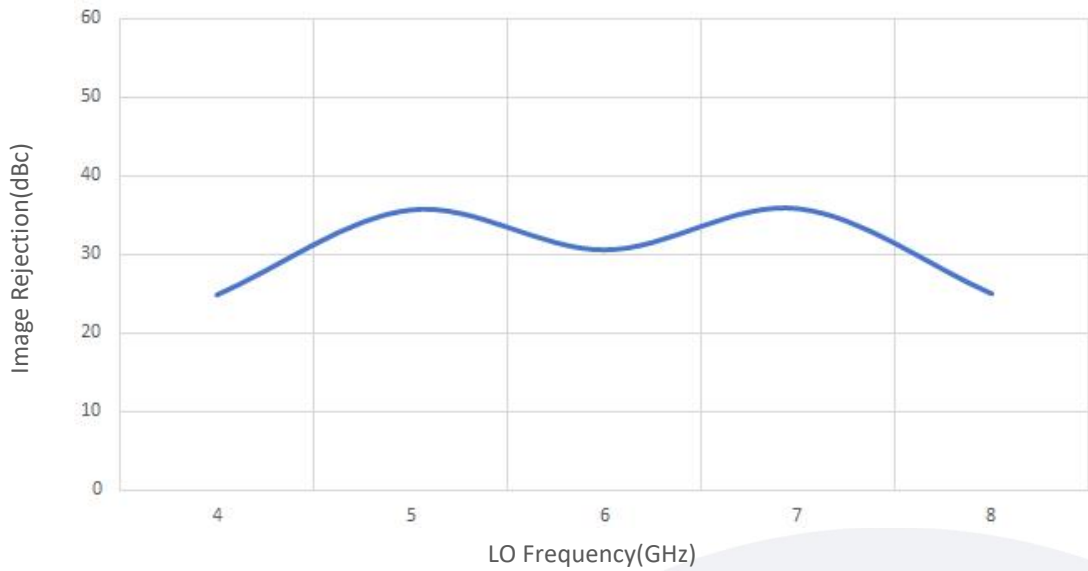
Conversion Loss vs LO Frequency



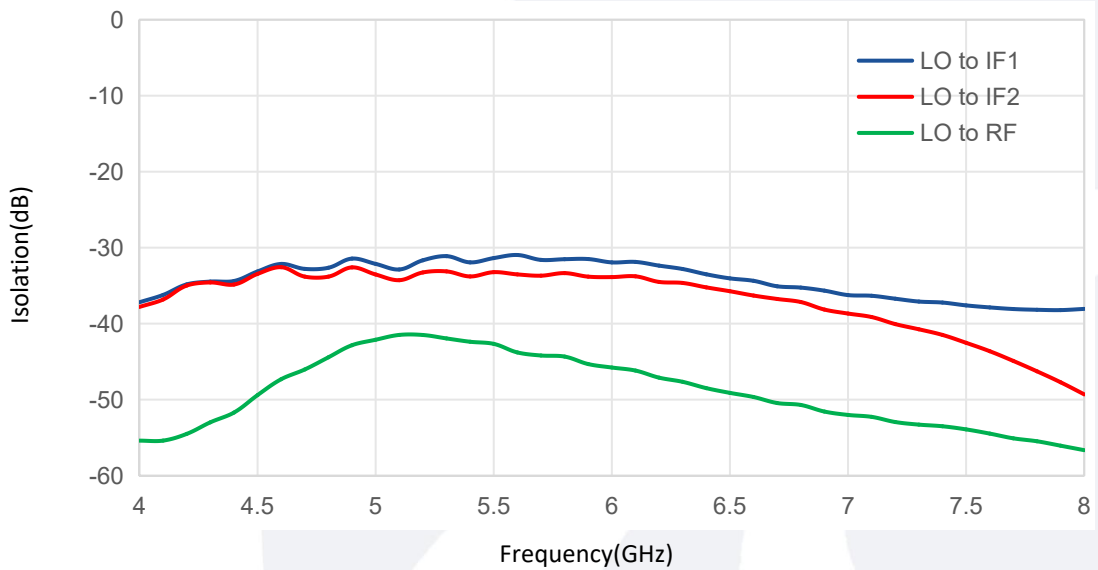
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

### Image Rejection vs LO Frequency

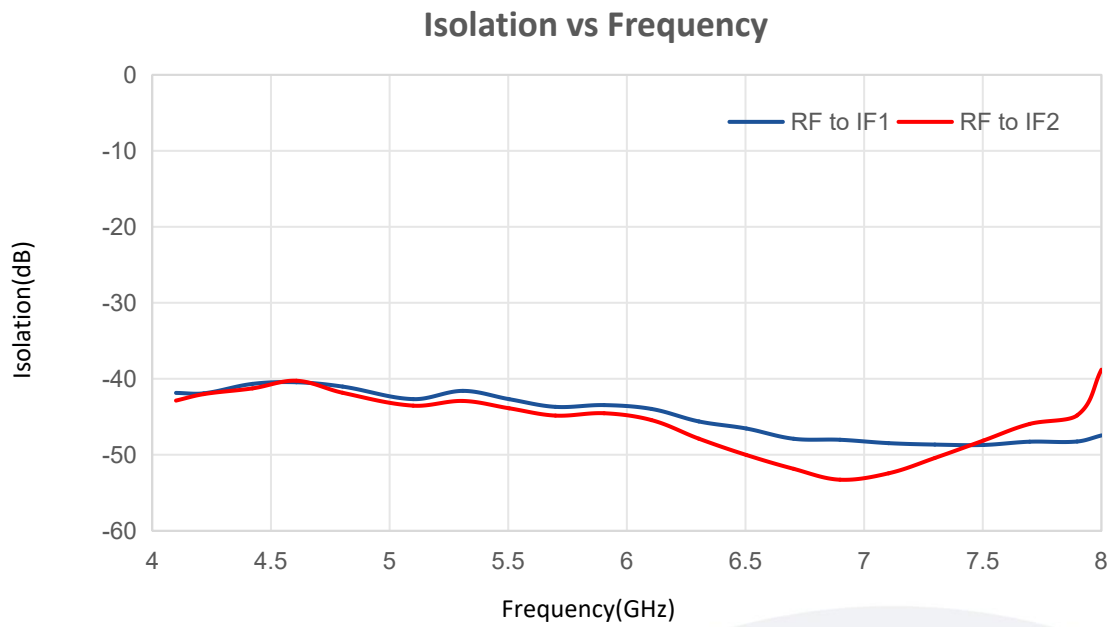


### Isolation vs Frequency



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## 典型曲线 Typical Performance Data:



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