

## Dual Balance Mixer

**RF:0.5-2.5 GHz/LO:0.5-2.5 GHz/IF:DC-1 GHz****Model: TLBM-0.5G2.5G-S**

TLBM-0.5G2.5G-S is a dual balance mixer. The mixer covers the RF frequency from 0.5 to 2.5 GHz ,LO frequency from 0.5 to 2.5 GHz with an extremely broad IF output from DC to 1 GHz. The mixer offers a conversion loss of 13 dB typical and LO input power of 17 dBm typical.

### Features:

- RF coverage : 0.5-2.5GHz
- LO coverage : 0.5-2.5GHz
- IF operation : DC-1GHz
- Conversion loss: 13dB Typ
- High LO to RF isolation
- Dual Balanced Mixer

### Applications:

- Defense & federal communications
- Instrumentations

### Electrical Characteristics:

| Parameter          | Min | Typ | Max | Units |
|--------------------|-----|-----|-----|-------|
| RF Frequency       | 0.5 |     | 2.5 | GHz   |
| LO Frequency       | 0.5 |     | 2.5 | GHz   |
| LO-Input power     |     | 17  |     | dBm   |
| IF Frequency       | DC  |     | 1   | GHz   |
| Input P1dB         |     | 12  |     | dBm   |
| Conversion Loss    |     | 11  |     | dB    |
| RF to IF Isolation |     | 10  |     | dB    |
| RF to LO Isolation |     | 35  |     | dB    |
| LO to IF Isolation |     | 35  |     | dB    |

### Mechanical Specifications:

| Parameter   | Value       | Units |
|-------------|-------------|-------|
| Connector1  | SMA Female  |       |
| Connector 2 | SMA Female  |       |
| Connector 3 | SMA Female  |       |
| Size        | 23.6*14.4*8 | mm    |

## Absolute Maximum Ratings:

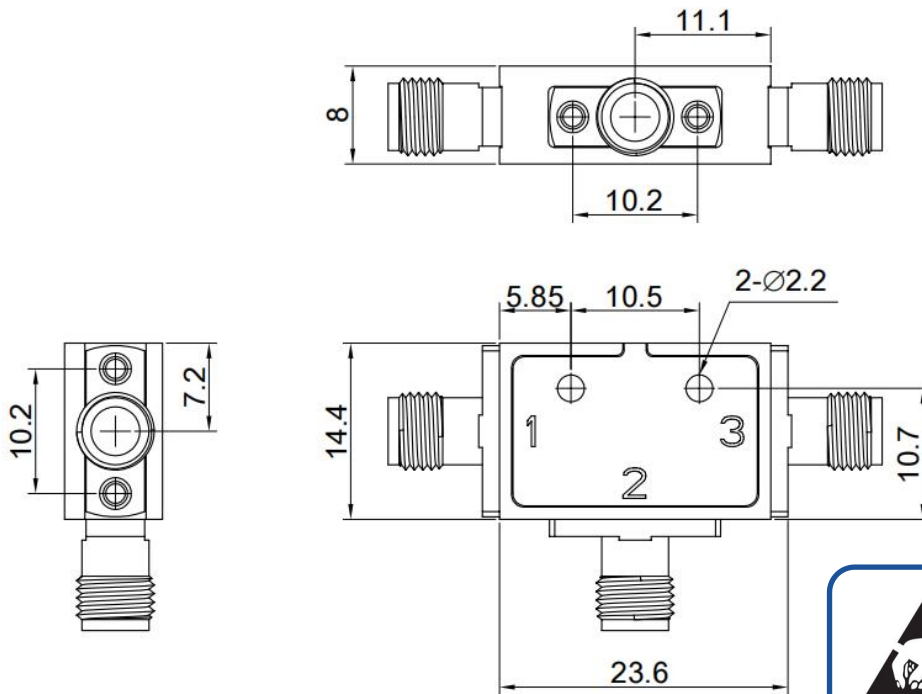
| Parameter             | Value                |
|-----------------------|----------------------|
| RF/LO Input Power     | TBD                  |
| ESD sensitivity (HBm) | Class 0, passed 150V |

## Port Functions

| Port   | Function |
|--------|----------|
| Port 1 | RF       |
| Port 2 | IF       |
| Port 3 | LO       |

## Outline Drawing:

Unit:mm; Tolerance:±0.1mm



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

## Environmental Conditions:

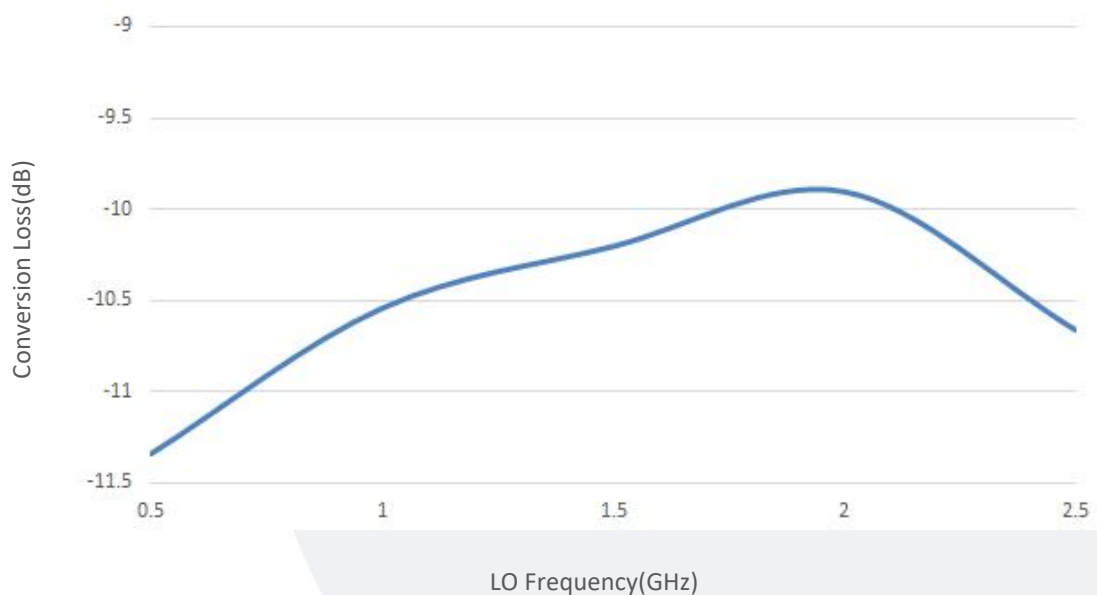
| Parameter                       | Min                                                 | Typ | Max | Units |
|---------------------------------|-----------------------------------------------------|-----|-----|-------|
| Operating Temperature           | -40                                                 |     | +70 | °C    |
| Non-operating Temperature       | -55                                                 |     | +85 | °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 |
|-----------------|---------------------------------------------------------------|----------|
| TLBM-0.5G2.5G-S | Dual Balanced Mixer<br>RF:0.5-2.5GHz,LO:0.5-2.5GHz,IF:DC-1GHz | Rev.1.1  |

## Typical Performance Data:

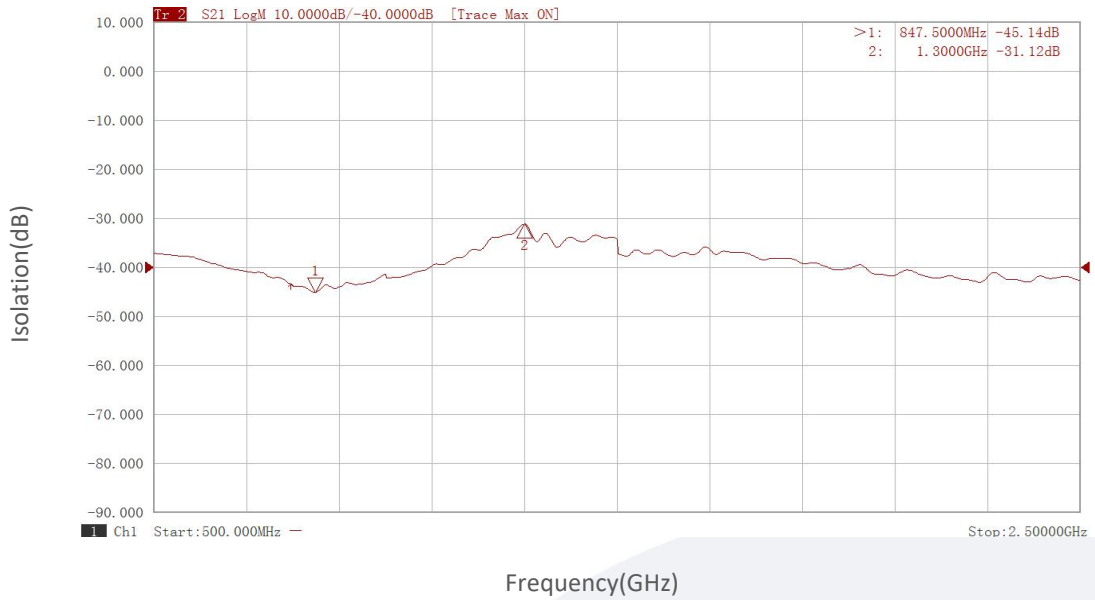
Conversion Loss vs LO Frequency



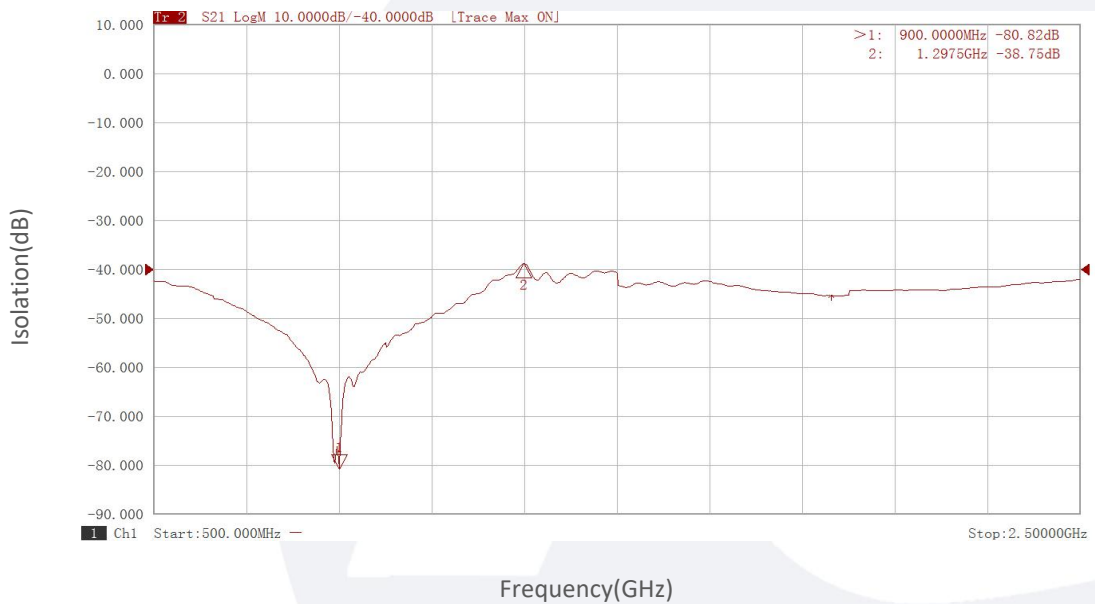
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

### LO to IF Isolation vs Frequency



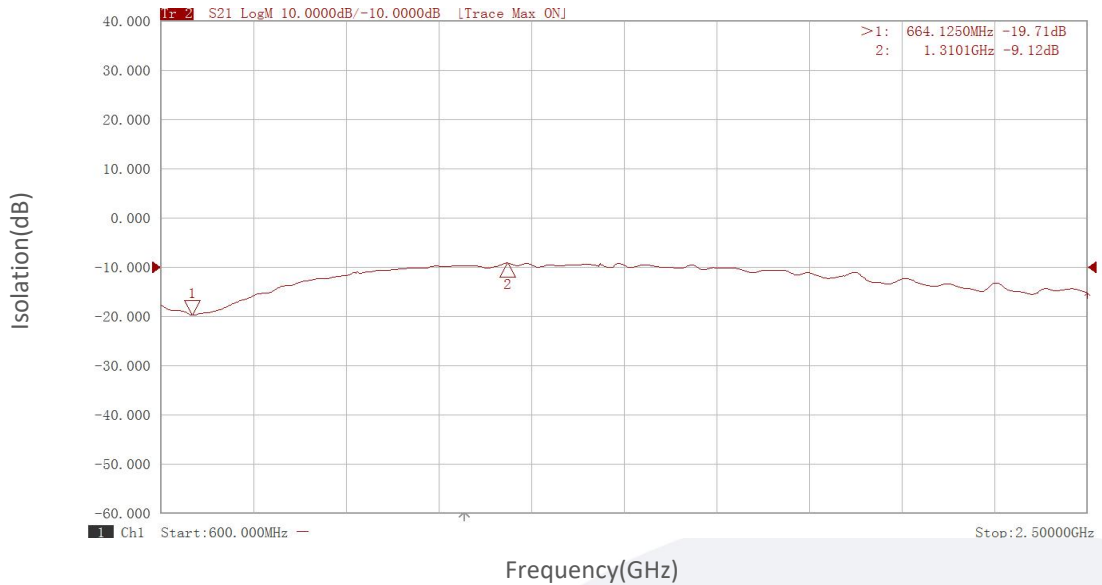
### LO to RF Isolation vs Frequency



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.

## Typical Performance Data:

### RF to IF 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.