

## G-Band IQ-subharmonic Mixer

RF:200-240GHz/LO:100-120GHz/IF:DC-20GHz

Model: TMIQ-200240-0230-04

TMIQ-200240-0230-04 is a G-Band IQ-subharmonic mixer spanning 200 to 240 GHz on the RF and 100 to 120 GHz on the LO ports with an IF from DC to 20 GHz. Up to 20 dBc of image rejection is available due to the excellent phase and amplitude balance of its on-chip LO quadrature hybrid.

### Features:

- RF coverage: 200-240 GHz
- LO coverage: 100-120 GHz
- IF operation: DC-20 GHz
- Conversion loss: 12dB Typ
- LO power : 10dBm Typ

### Applications:

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

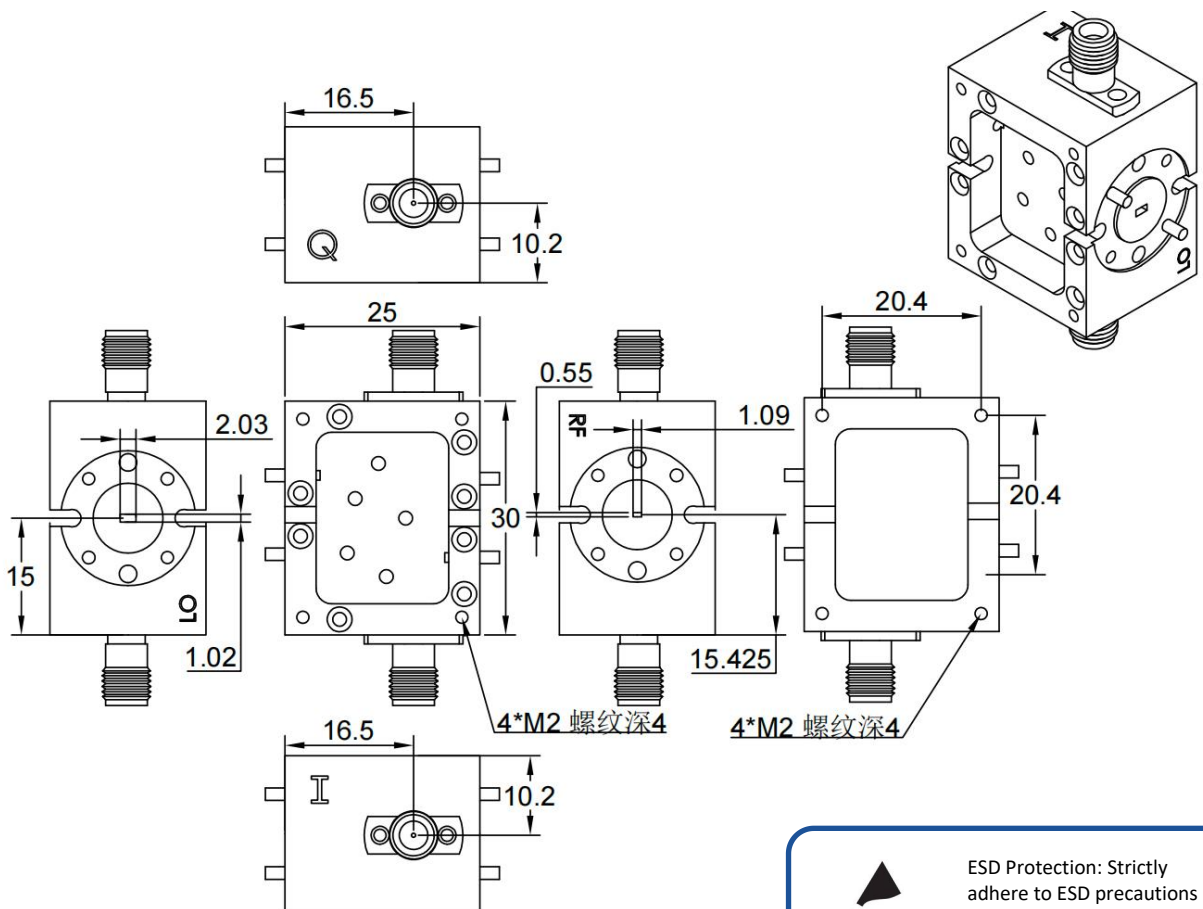
### 电气特性 Electrical Characteristics:

| 参数 Parameter                         | Min | Typ | Max | 单位 Units |
|--------------------------------------|-----|-----|-----|----------|
| RF频率 RF Frequency                    | 200 |     | 240 | GHz      |
| LO频率 LO Frequency                    | 100 |     | 120 | GHz      |
| LO驱动功率 LO-Input power                | 9   | 10  | 12  | dBm      |
| IF频率 IF Frequency                    | DC  | 20  | 30  | GHz      |
| 变频损耗 Conversion Loss                 | 11  | 12  | 15  | dB       |
| I/Q幅度不平衡度<br>I/Q Amplitude Unbalance |     | 0.5 |     | dB       |
| I/Q相位不平衡度<br>I/Q Phase Unbalance     |     | 3   |     | °        |
| RF回波损耗 RF Return Loss                |     | -12 |     | dB       |
| LO回波损耗 LO Return Loss                |     | -10 |     | dB       |
| IF回波损耗 IF Return Loss                |     | -10 |     | dB       |

## 机械特性 Mechanical Specifications:

| 参数 Parameter      | 指标 Value        | 单位 Units |
|-------------------|-----------------|----------|
| RF接口 RF Connector | WR-4.3/UG-387/U |          |
| LO接口 LO Connector | WR-08/UG-387/U  |          |
| IF接口 IF Connector | 2.4mm Female    |          |
| 尺寸 Size           | 32*30*19        | mm       |
| 重量 Weight         | 110             | g        |
| 材质 Material       | Cu              |          |

## 外形图 Outline Drawing: Unit:mm



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

## 温度环境 Environmental Conditions:

| 参数 Parameter                       | Min   | Typ | Max | 单位 Units |
|------------------------------------|---|-----|-----|----------|
| 操作温度 Operating Temperature         | -25   |     | +65 | °C       |
| 存储温度 Non-operating Temperature     | -65   |     | +85 | °C       |
| 相对湿度 Relative humidity             |   | 95  |     | %        |
| 海拔 Altitude                        | 10,000  |     |     | feet     |
| 震动 Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis |     |     |          |
| 冲击 Shock(non operating)            | 20G for 11msc half sin wave,3 axis both directions  |     |     |          |

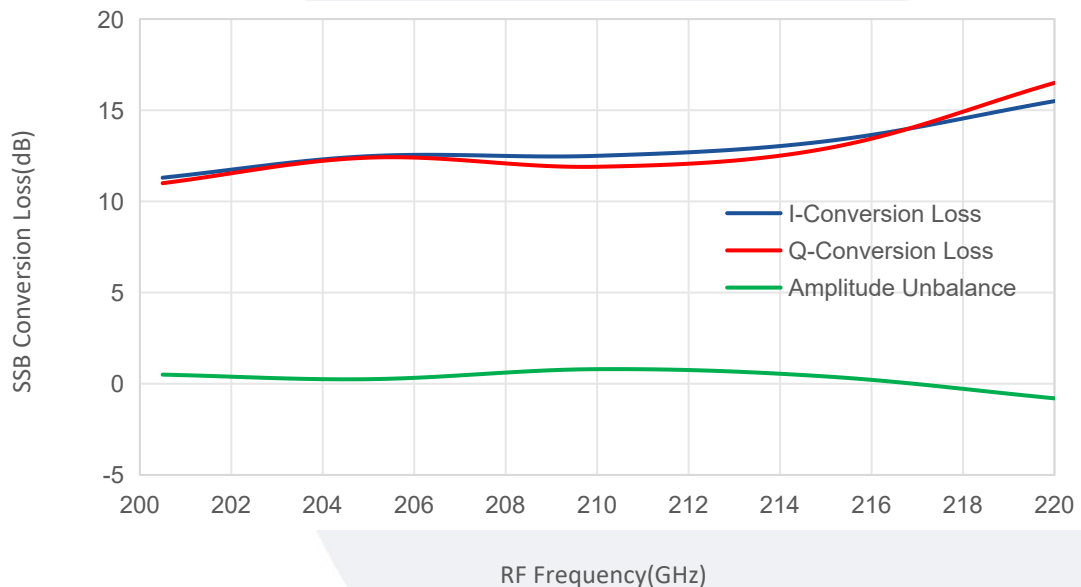
## 订货信息 Ordering Information:

| 标准型号 Base Number    | 描述 Description   | 版本号 Revision |
|---------------------|--|--------------|
| TMIQ-200240-0230-04 | G-Band IQ-subharmonic Mixer<br>RF:200-240GHz,LO:100-120GHz,IF:DC-20GHz | Rev.1.1      |

## 典型曲线 Typical Performance Data:

### SSB Conversion Loss vs RF Frequency

LO=100GHz

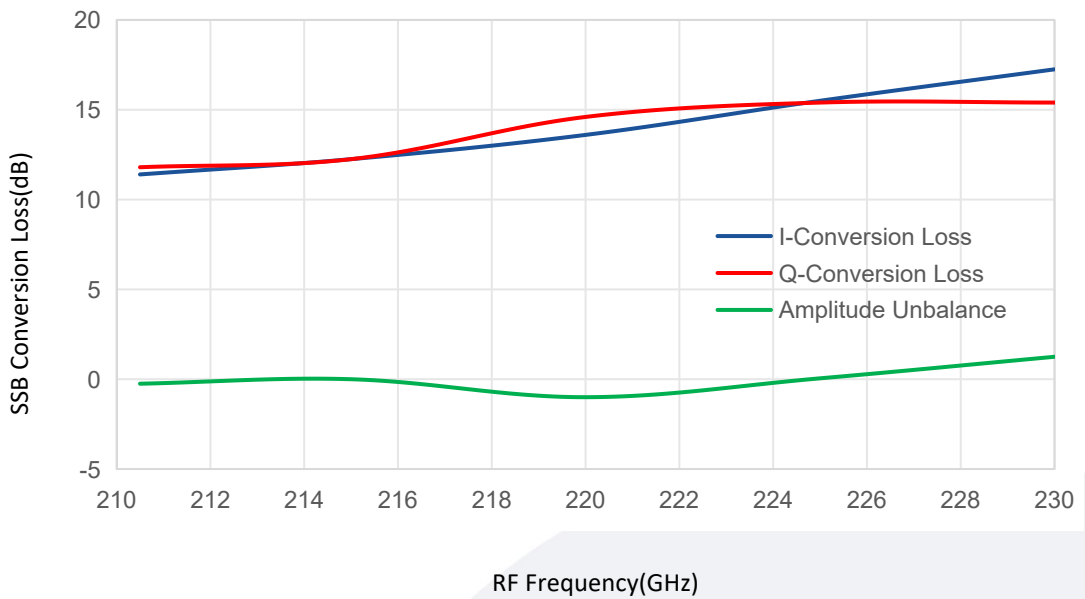


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

**典型曲线 Typical Performance Data:**

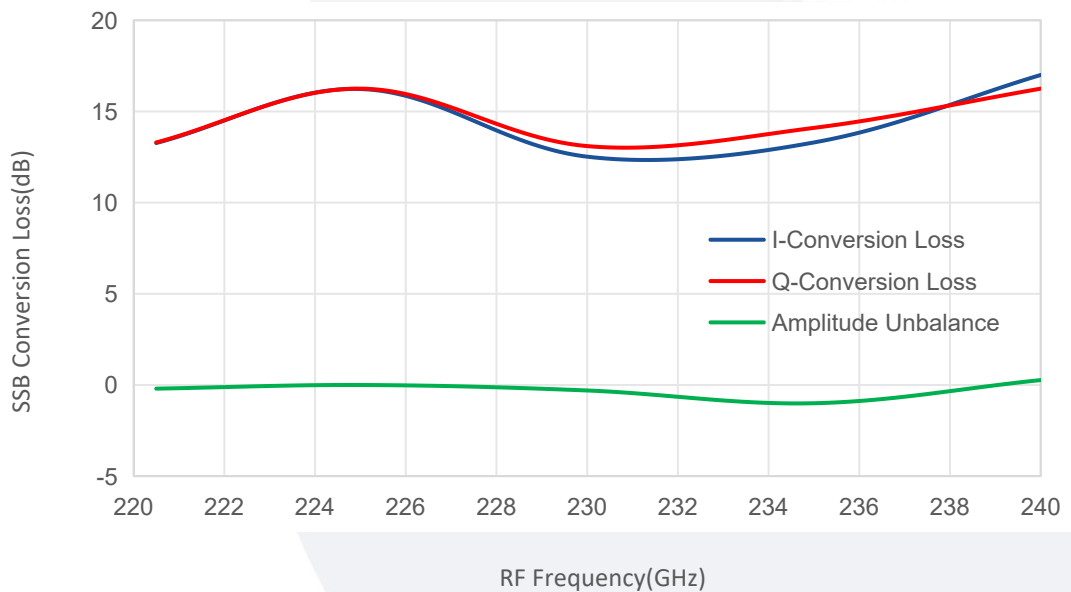
**SSB Conversion Loss vs IF Frequency**

LO=105GHz



**SSB Conversion Loss vs RF Frequency**

LO=110GHz

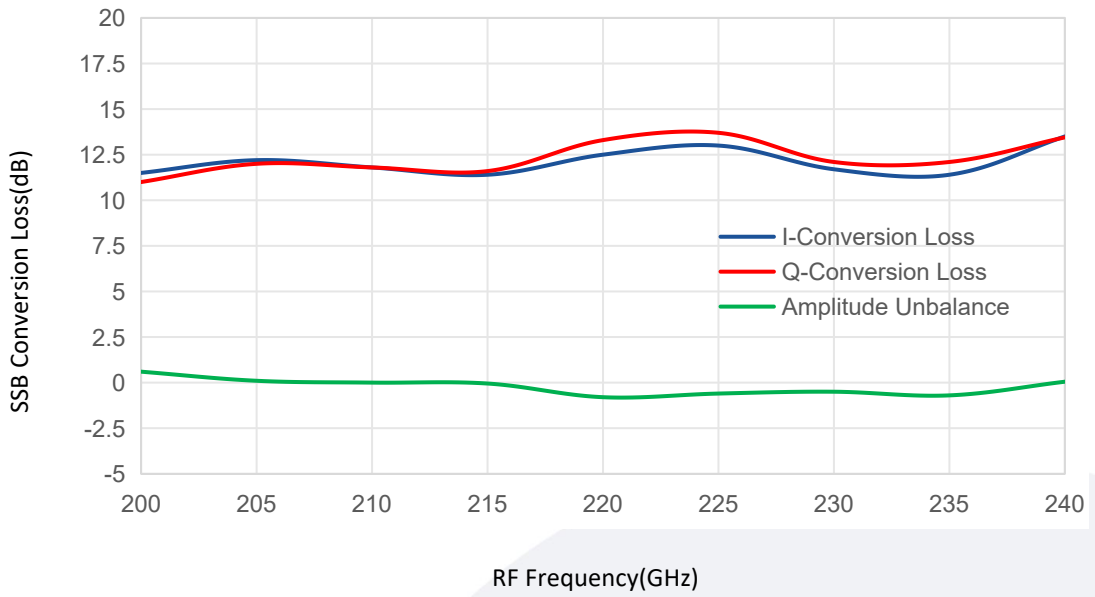


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## 典型曲线 Typical Performance Data:

### SSB Conversion Loss vs IF Frequency

IF=1GHz



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