

## F-Band Sub-Harmonic Mixer

RF:90-140GHz/LO:45-70GHz/IF:DC-20 GHz

Model: TLHM-090140-0220-08

TLHM-090140-0220-08 is a F-Band Sub-Harmonic mixer. The mixer supports the full waveguide band operation for LO frequency from 45 to 70 GHz and RF frequency from 90 to 110 GHz with an extremely broad IF output from DC to 20 GHz. The mixer offers a conversion loss of 11 dB typical@IF=1GHz and LO input power of 16 dBm typical.

### Features:

- Low LO Power Requirement
- Subharmonic Mixing
- Compact Package

### Applications:

- Radar Systems
- Communication Systems
- Test Equipment

## 电气特性 Electrical Characteristics:

| 参数 Parameter                            | Min  | Typ  | Max | 单位 Units |
|-----------------------------------------|------|------|-----|----------|
| RF频率 RF Frequency                       | 90   |      | 140 | GHz      |
| LO频率 LO Frequency                       | 45   |      | 70  | GHz      |
| IF频率 IF Frequency                       | DC   |      | 20  | GHz      |
| LO驱动功率 LO-Input power                   |      | 16   |     | dBm      |
| RF输入P1dB RF Input P1dB                  |      | 0    |     | dBm      |
| IF射频输入P1dB IF Input P1dB                |      | 0    |     | dBm      |
| 单边带变频损耗<br>SSB Conversion Loss@IF=1GHz  |      | -11  |     | dB       |
| 单边带变频损耗<br>SSB Conversion Loss@LO=45GHz |      | -12  |     | dB       |
| 偏置电压 Bias Voltage                       | -1.5 | -0.8 | 0   | V DC     |

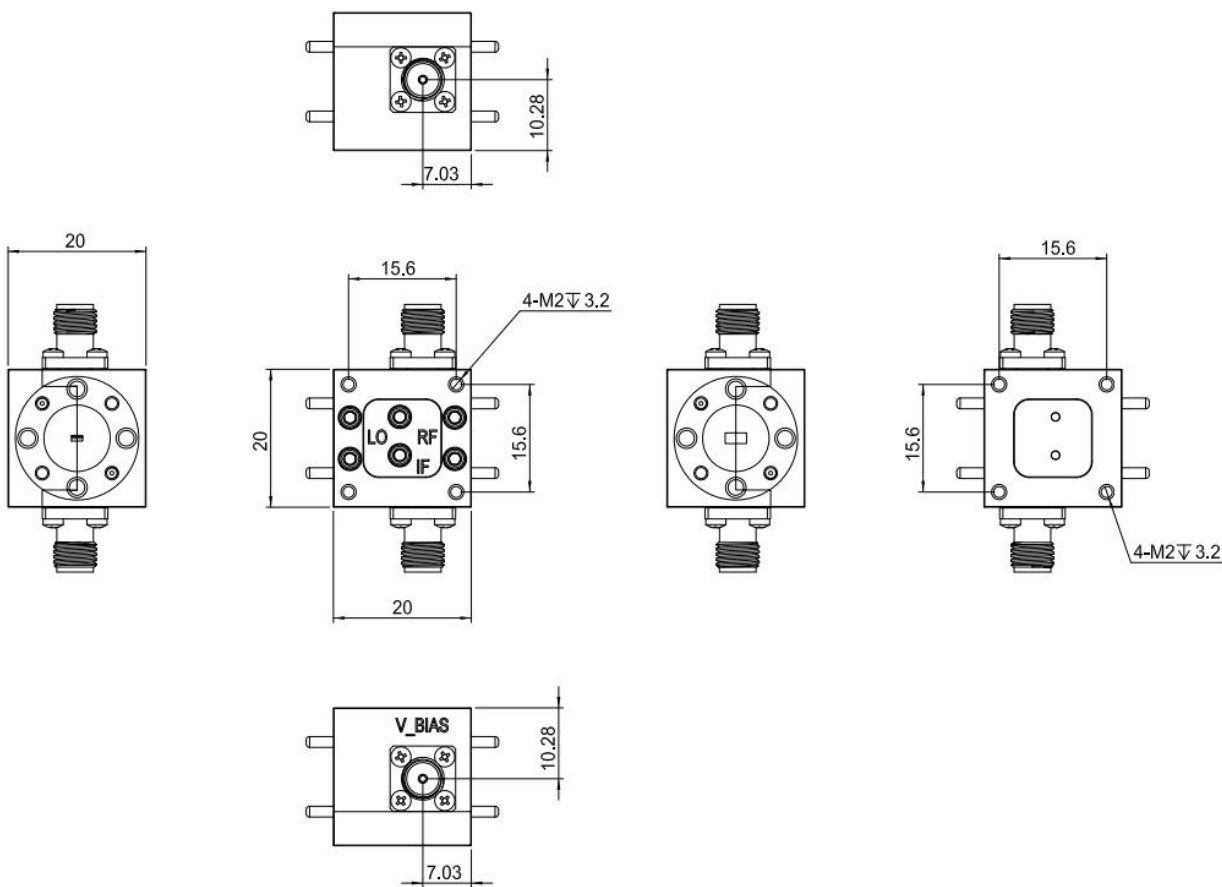
## 机械特性 Mechanical Specifications:

| 参数 Parameter                  | 指标 Value       | 单位 Units |
|-------------------------------|----------------|----------|
| RF 接口 RF Connector            | WR-08/UG-387/U |          |
| LO 接口 LO Connector            | WR-15/UG-385/U |          |
| IF 接口 IF Connector            | SMA Female     |          |
| 偏置电压接口 Bias Voltage Connector | SMA Female     |          |
| 尺寸 Size                       | 20*20*20       | mm       |

### 绝对最大值 Absolute Maximum Ratings:

| 参数 Parameter                 | 指标 Value             |
|------------------------------|----------------------|
| RF 功率 RF Input Power         | 13 dBm               |
| IF 功率 IF Input Power         | 13 dBm               |
| LO 功率 LO Input Power         | 20 dBm               |
| ESD灵敏度 ESD sensitivity (HBm) | Class 0, passed 150V |

### 外形图 Outline Drawing: Unit:mm



## 温度环境 Environmental Conditions:

| 参数 Parameter                       | Min                                                 | Typ | Max | 单位 Units |
|------------------------------------|-----------------------------------------------------|-----|-----|----------|
| 操作温度 Operating Temperature         | -10                                                 |     | +65 | °C       |
| 存储温度 Non-operating Temperature     | -45                                                 |     | +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 |
|---------------------|-------------------------------------------------------------------|--------------|
| TLHM-090140-0220-08 | F-Band Sub-Harmonic Mixer<br>RF:90-140GHz,LO:45-70GHz,IF:DC-20GHz | Rev.1.0      |