

G-Band Subharmonic Mixer

RF:140-220GHz/LO:70-110GHz/IF:DC-40GHz

Model: TLHM-140220-0240-05

TLHM-140220-0240-05 is a G-Band Subharmonic mixer. The mixer supports the full waveguide band operation for both LO frequency from 70 to 110 GHz and RF frequency from 140 to 220 GHz with an extremely broad IF output from DC to 40GHz. The mixer offers a conversion loss of 12 dB typical and LO input power of 5 dBm typical. The W-band,X6 multiplier of Talent model TMAM-070110-0608-10 can be used as the LO driver for this mixer.

Features:

- RF Frequency range: 140-220GHz
- LO Frequency range: 70-110GHz
- IF Frequency range: DC-40GHz
- Low LO power requirement
- Subharmonic mixer
- Suggested LO drive model: TMAM-070110-0608-10

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
RF Frequency	140		220	GHz
LO Frequency	70		110	GHz
IF Frequency	DC		40	GHz
LO-Input power	4	5	8	dBm
RF Input VSWR		3		:1
SSB Conversion Loss		12		dB

Mechanical Specifications:

Parameter	Value	Units
RF Connector	WR-5.1/UG-387/U	
LO Connector	WR-10/UG-387/U	
IF Connector	2.4mm Female	
Size	Model A: 29*28*20 Model B: 25*24*20	mm

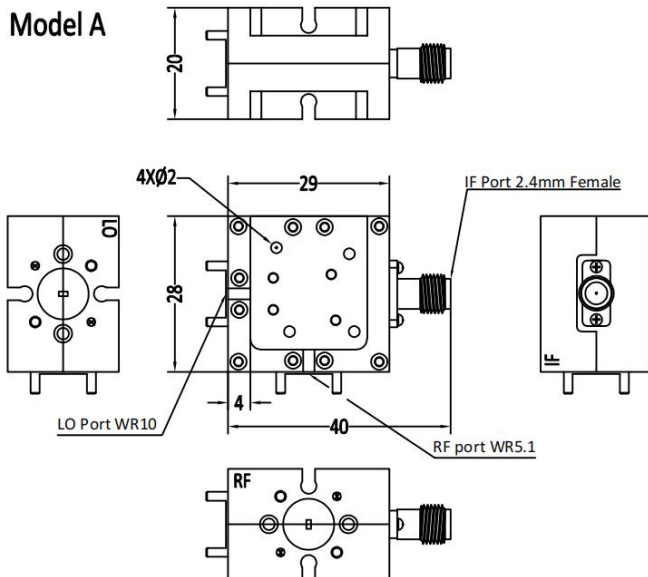
Absolute Maximum Ratings:

Parameter	Value
RF Input Power	0 dBm
LO Input Power	+8 dBm
ESD sensitivity (HBM)	Class 0, passed 150V

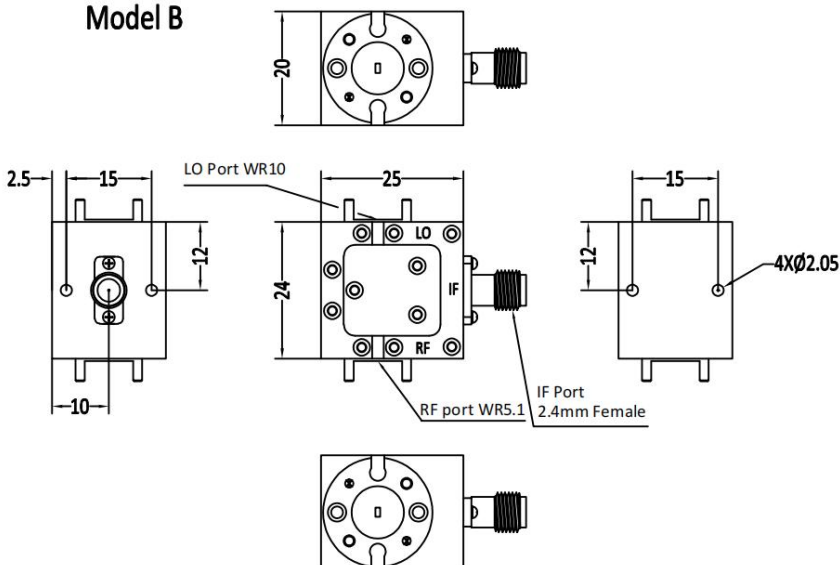
Outline Drawing:

Unit:mm; Tolerance:±0.1mm

Model A



Model B



Environmental Conditions:

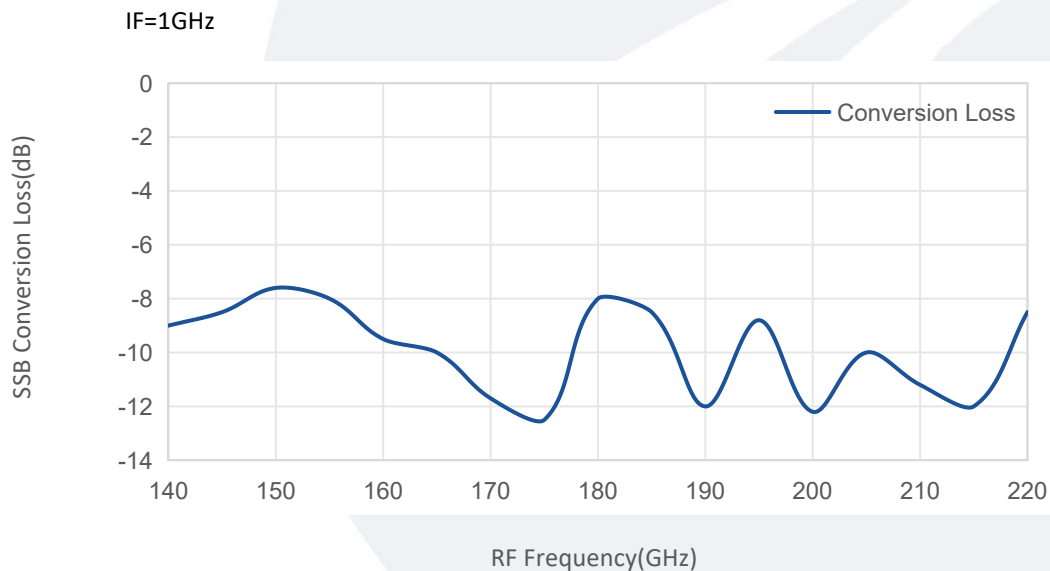
Parameter	Min	Typ	Max	Units
Operating Temperature	0		+45	°C
Non-operating Temperature	-25		+65	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

Ordering Information:

Base Number	Description	Revision
TLHM-140220-0240-05-A	G-Band Subharmonic Mixer, 29*28*20 mm RF:140-220GHz,LO:70-110GHz,IF:DC-40GHz	Rev.1.1
TLHM-140220-0240-05-B	G-Band Subharmonic Mixer, 25*24*20mm RF:140-220GHz,LO:70-110GHz,IF:DC-40GHz	Rev.1.1

Typical Performance Data:

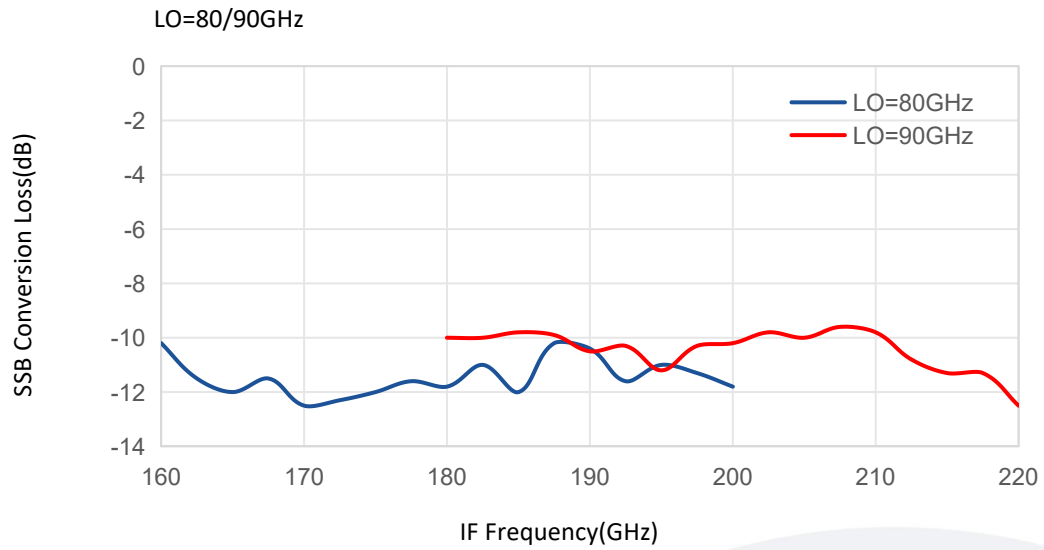
SSB Conversion Loss vs RF Frequency



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:

SSB Conversion Loss vs IF 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.