

## F-Band Low Noise Amplifier

WR-08/90-140GHz/4.5dB NF/19dB Gain

Model: TMLA-090140-2045-08

TMLA-090140-2045-08 is a F-Band low noise amplifier with a typical small signal gain of 19 dB and a nominal noise figure of 4.5 dB across the frequency range of 90 to 140 GHz. The DC power requirement for the amplifier is +12 VDC /30 mA. The input and output port configuration offers an inline structure with WR-08 waveguides and UG-387/U-M anti-cocking flanges.

### Features:

- Frequency range:90-140GHz
- Gain: 19dB Typ
- Noise Figure: 4.5dB Typ
- Unconditional stability

### Applications:

- Passive Imaging
- 5G Systems

### Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	90		140	GHz
Small Signal Gain		19		dB
Gain Flatness		±2.0		dB
Noise Figure		4.5		dB
Output P1dB		-4		dBm
Input VSWR		2.2		:1
Output VSWR		2.2		:1
DC Voltage		12		V DC
DC power supply		30		mA

### Mechanical Specifications:

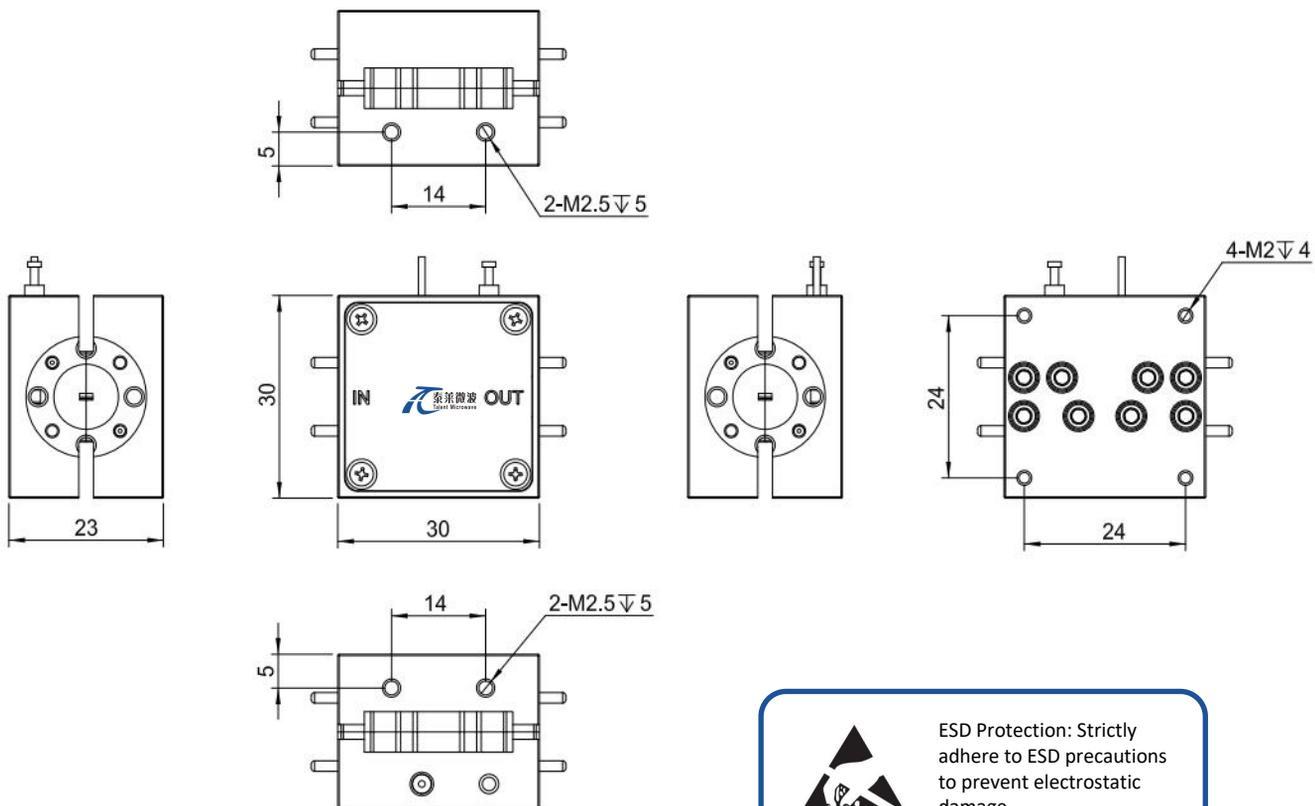
Parameter	Value	Units
Input Connector	WR-08/ UG-387/U	
Output Connector	WR-08/ UG-387/U	
Power Supply Pin	Solder Pin	
Size	30*30*23	mm

### Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+15 V
RF Input Power	+5 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

### Outline Drawing:

Unit:mm



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

### Environmental Conditions:

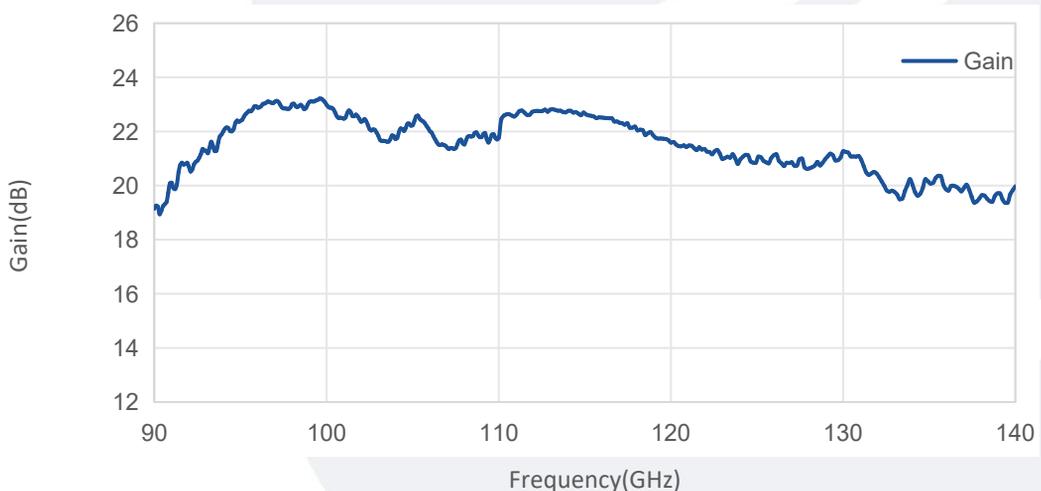
Parameter	Min	Typ	Max	Units
Operating Temperature	-10		+65	°C
Non-operating Temperature	-45		+85	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

### Ordering Information:

Base Number	Description	Revision
TMLA-090140-2045-08	Low Noise Amplifier,90-140Hz, Noise Figure:4.5dB, Gain:19dB,+12V DC,WR-08	Rev.1.1

### Typical Performance Data:

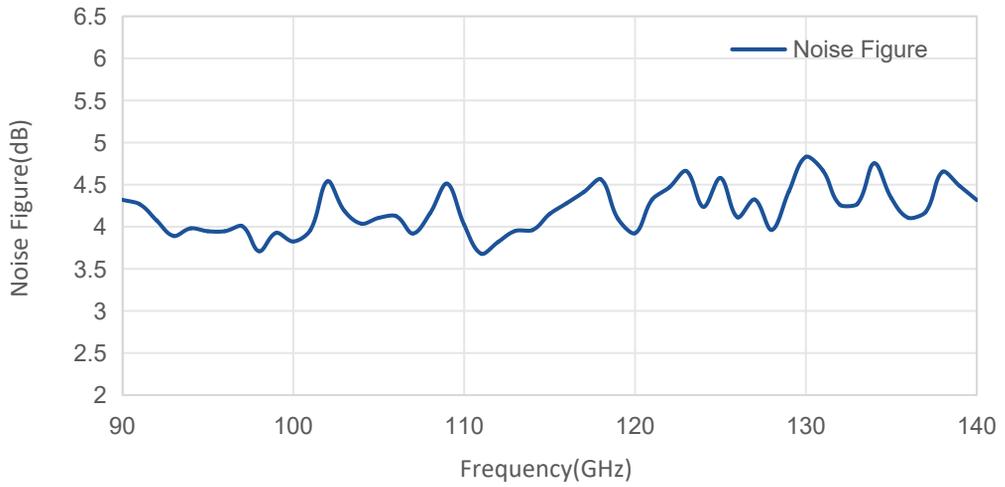
Gain vs Frequency



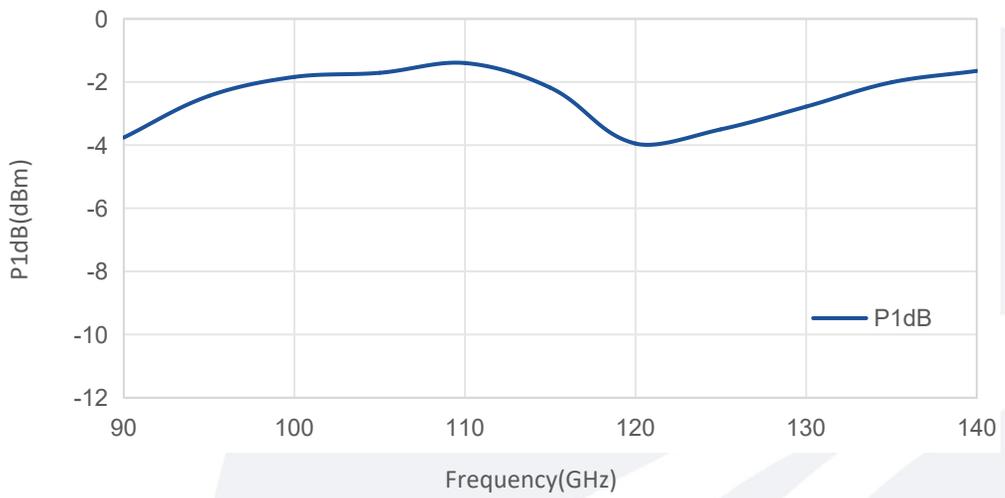
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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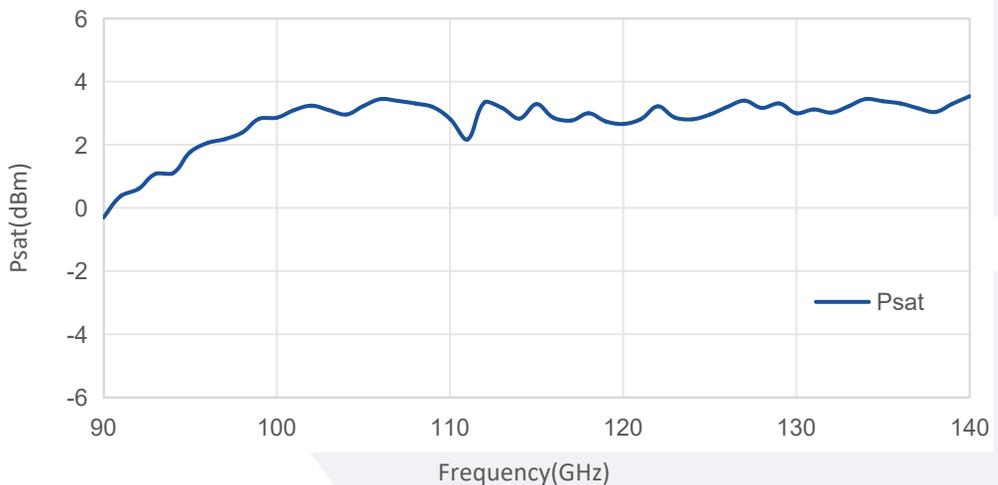
**Noise Figure vs Frequency**



**P1dB vs Frequency**



**Psat vs Frequency**



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