

## Power Amplifier

WR-15/50-75GHz/35dB Gain/30dBm Psat

Model: TMPA-050075-3530-15

TMPA-050075-3530-15 is a power amplifier with a typical small signal gain of 35 dB and a nominal Psat of 30 dBm across the frequency range of 50 to 75 GHz. The DC power requirement for the amplifier is +16 VDC/670 mA. The input and output port configuration offers an inline structure with WR-15 waveguides and UG-385/U-M anticocking flanges.

### Features:

- Frequency range: 50-75GHz
- Gain: 35dB Typ
- Output Power Psat: 30dBm Typ
- Good Power and Gain Flatness

### Applications:

- Passive Imaging
- Communication Systems
- Radar Systems

### Electrical Characteristics:

| Parameter         | Min | Typ | Max | Units |
|-------------------|-----|-----|-----|-------|
| Frequency range   | 50  |     | 75  | GHz   |
| Small Signal Gain |     | 35  |     | dB    |
| Output P1dB       |     | 28  |     | dBm   |
| Output Psat       |     | 30  |     | dBm   |
| Input VSWR        |     | 2   |     | :1    |
| Output VSWR       |     | 2.5 |     | :1    |
| DC Voltage        |     | 16  |     | V DC  |
| DC Supply Current |     | 670 |     | mA    |

### Mechanical Specifications:

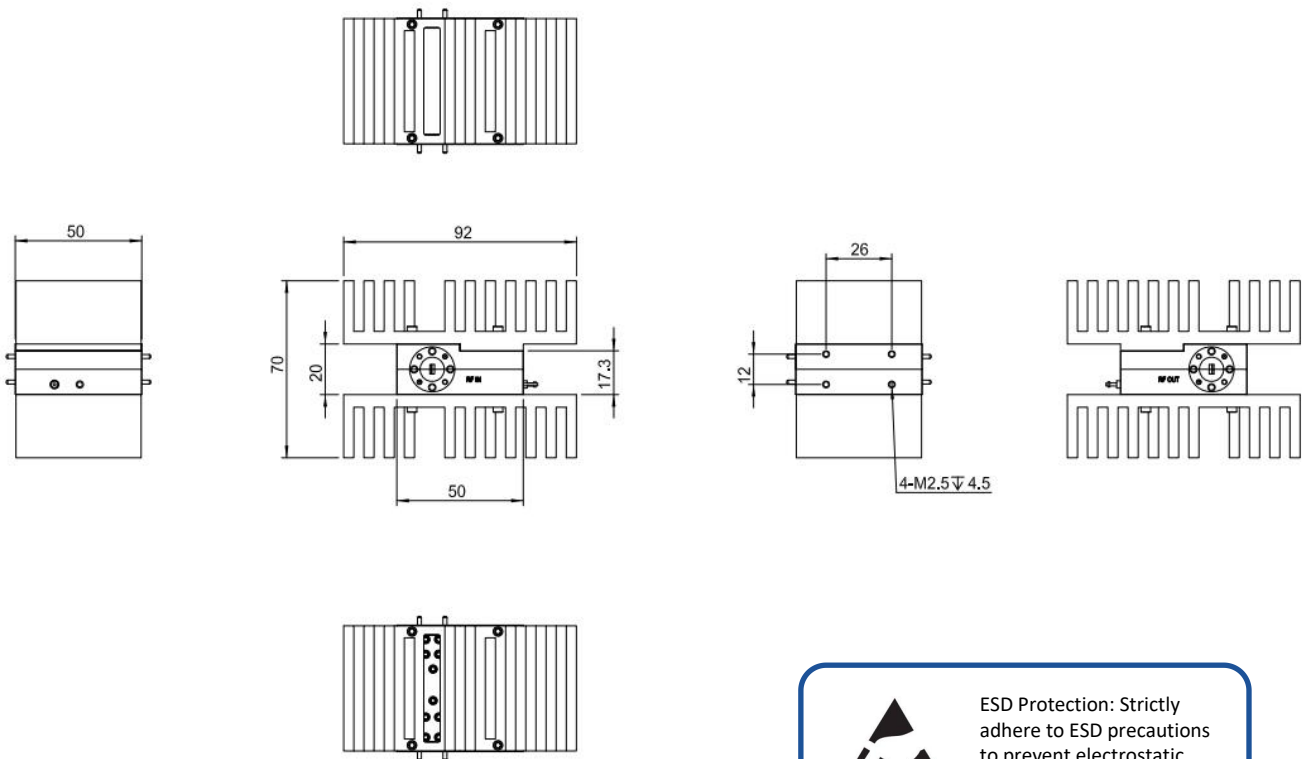
| Parameter               | Value   | Units |
|-------------------------|---|-------|
| Input /Output Connector | WR-15/UG-385/U  |       |
| DC Bias                 | Solder Pin  |       |
| Size                    | 50*50*20(Without heatsink)<br>92*70*50(With heatsink) | mm    |

### Absolute Maximum Ratings:

| Parameter             | Value                |
|-----------------------|----------------------|
| Supply Bias Voltage   | +18 V                |
| RF Input Power        | +15 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:

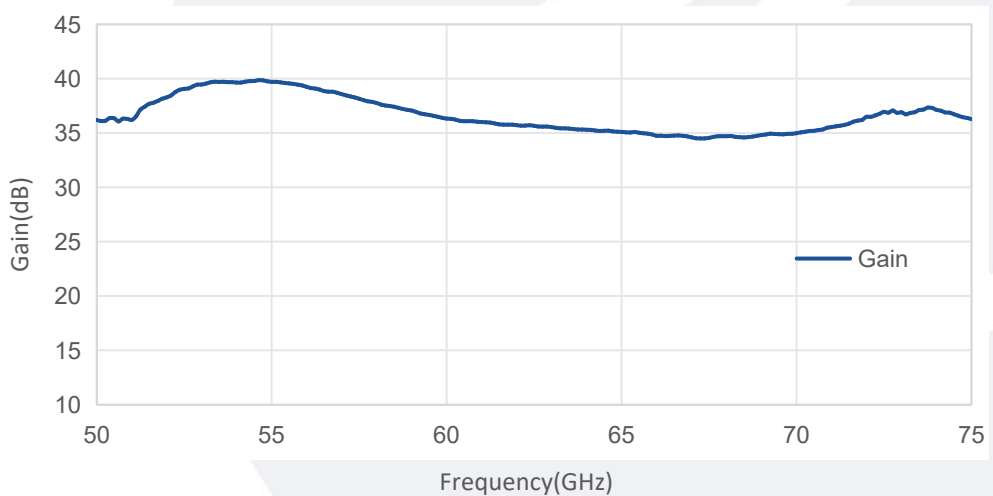
| Parameter                       | Min   | Typ | Max | Units |
|---------------------------------|---|-----|-----|-------|
| Operating Temperature           | -10   |     | +65 | °C    |
| Non-operating Temperature       | -45   |     | +85 | °C    |
| Relative humidity               |   | 95  |     | %     |
| 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 |
|---------------------|---|----------|
| TMPA-050075-3530-15 | Power Amplifier, 50-75GHz, Gain: 35dB Type, P <sub>sat</sub> : 30dBm Type, +16V DC, WR-15 | Rev.1.0  |

### Typical Performance Data:

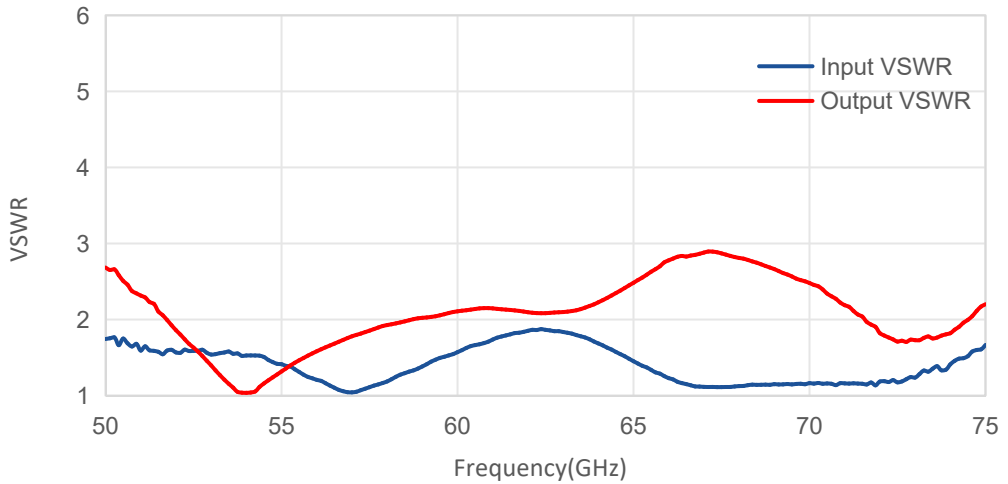
Gain vs Frequency



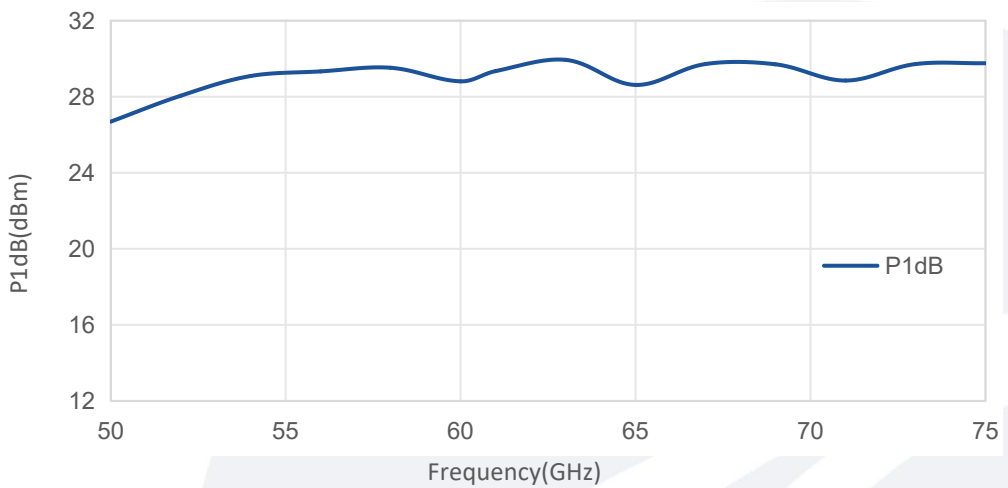
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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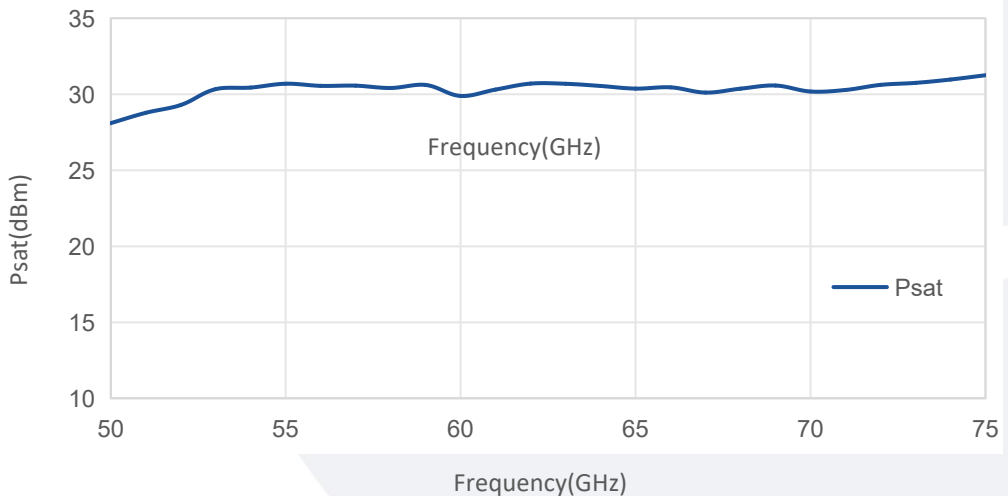
**VSWR vs Frequency**



**P1dB vs Frequency**



**Psat vs Frequency**



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