

## Power Amplifier

1-6GHz/50dB Gain/47dBm Psat

Model: TLPA1G6G-50-47

TLPA1G6G-50-47 is a power amplifier with a typical small signal gain of 50 dB and a minimum Psat of 47 dBm across the frequency range of 1 to 6 GHz. The DC power requirement for the amplifier is +28 VDC/10 A. The input port configuration offers coax adapter structure with SMA female and output port configuration offers coax adapter structure with N Female.

### Features:

- Frequency range: 1-6GHz
- Gain: 50dB Typ
- Output Power Psat: 47dBm Min
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Cellular
- PCN
- GSM
- ISM
- Lab Test

### Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	1		6	GHz
Small Signal Gain	47	50		dB
Gain Flatness		±3	±4	dB
Output P1dB	43	44		dBm
Output Psat	47	47.5		dBm
Input VSWR		1.5	2.0	:1
DC Voltage	+26	+28	+30	V DC
Static Current		3		A
Saturation Current		10	12	A
Impedance		50		Ohms

### Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/N Female	
DC Power Supply Connector	D-SUB-9	
Size	200*130*24(Without heatsink) 282.2*140*86(With heatsink)	mm
Weight	1000	g

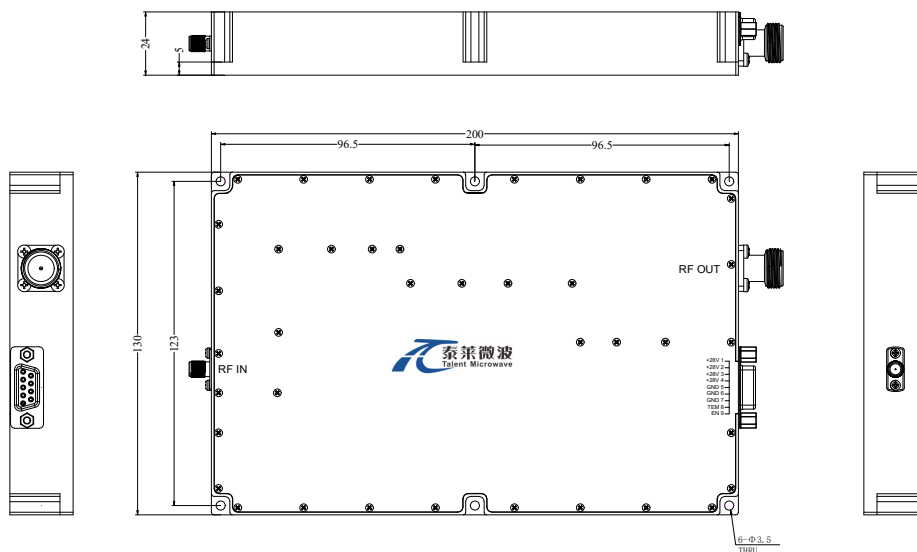
### Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+30 V
RF Input Power	5dBm
ESD sensitivity (HBm)	Class 0, passed 150V



### Outline Drawing:

Unit:mm



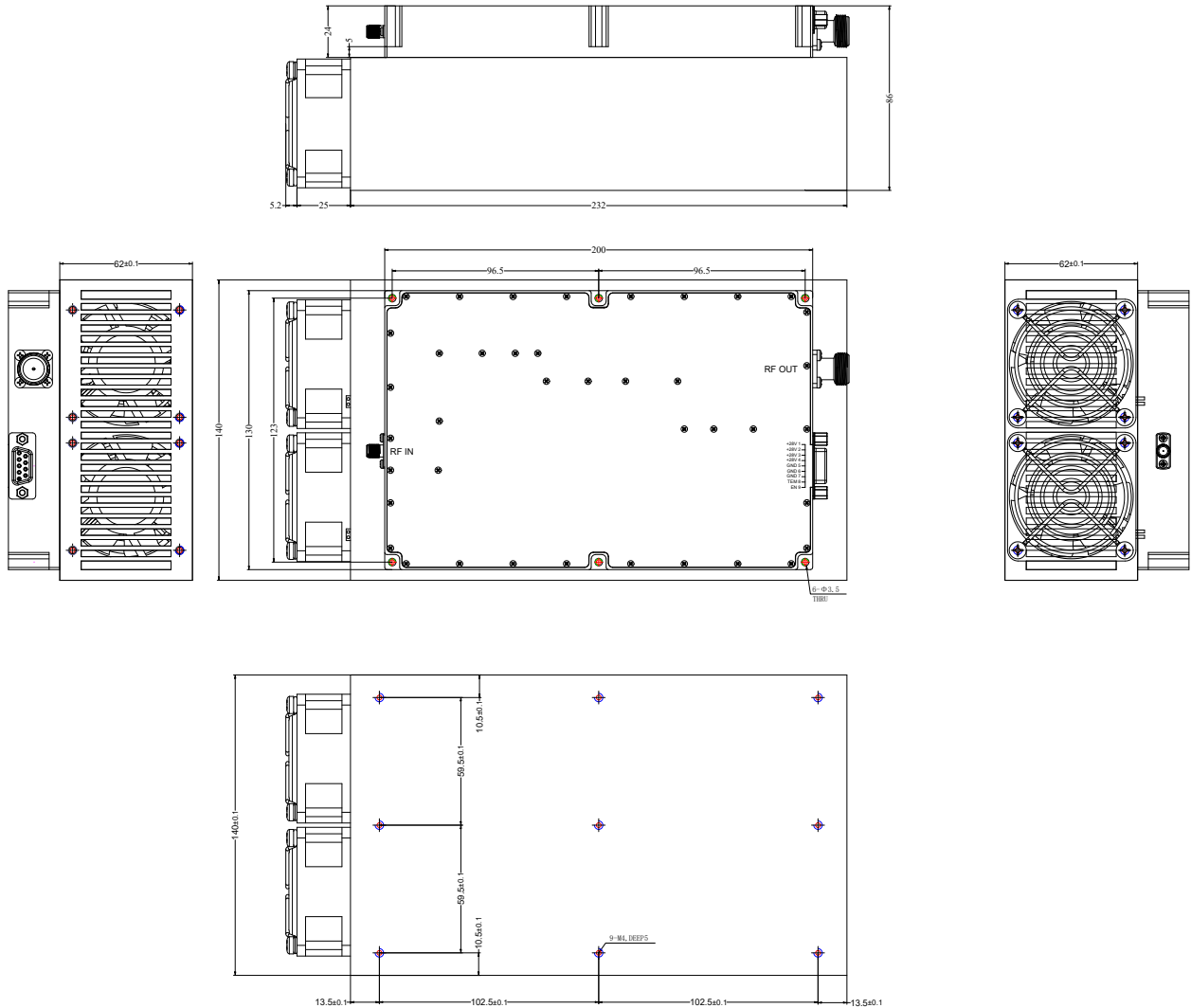
**\*\*\*Heat Sink Required During Operation**



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

**Outline Drawing:**

Unit:mm



**DC Supply Connector(DSUB-9 Female):**

Pin	Name	Function
1	Vcc	Power supply positive,+26.0-30.0VDC
2	Vcc	Power supply positive,+26.0-30.0VDC

### DC Supply Connector(DSUB-9 Female):

Pin	Name	Function
3	Vcc	Power supply positive,+26.0-30.0VDC
4	Vcc	Power supply positive,+26.0-30.0VDC
5	GND	Ground
6	GND	Ground
7	GND	Ground
8	Over TEM	When the temperature of the case exceeds 85 °C, the power amplifier will turn off and this pin will be pulled high. If the temperature of case drops to 70 °C, the power amplifier will return to normal operation, and this pin will be pulled low.
9	EN	Amplifier Enable: TTL High (5V) (Internally Pulled-High) Amplifier Disable: Short to ground

### Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature*	-20		+50	°C
Non-operating Temperature*	-30		+60	°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			

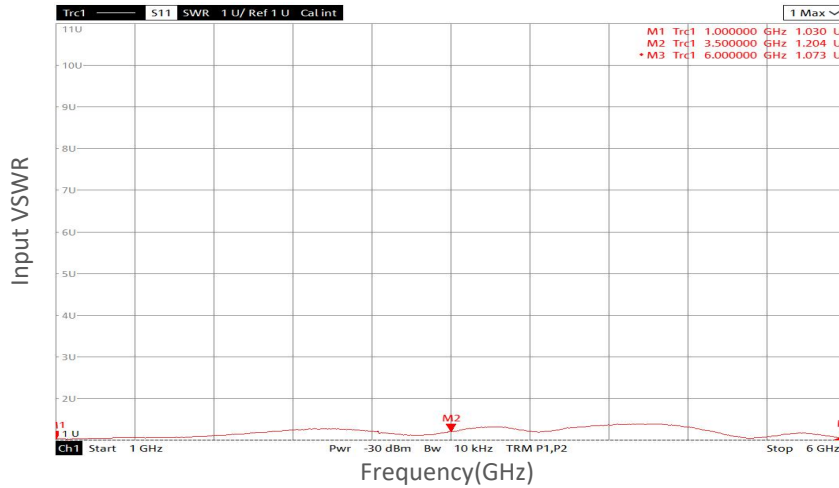
\*Note: For a wider temperature range, please consult the manufacturer.

### Ordering Information:

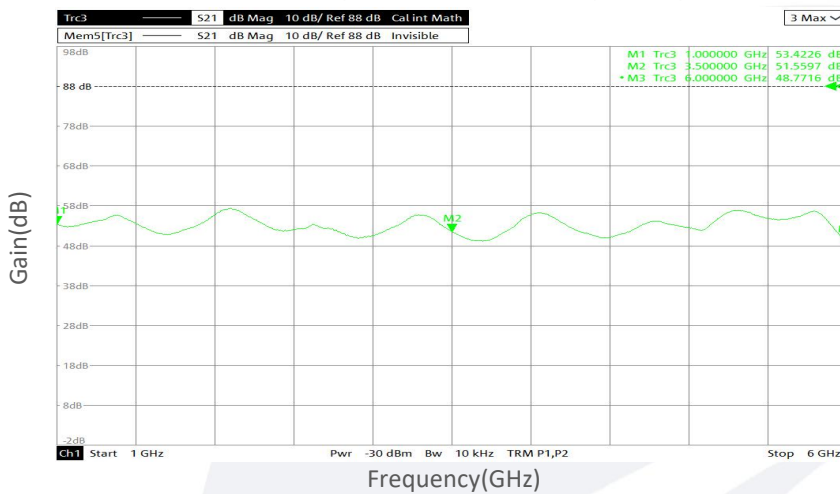
Base Number	Description	Revision
TLPA1G6G-50-47	Power amplifier 1-6GHz, Gain:50dB,Psat:47dBm,+28V DC,Without Heatsink	Rev.2.0
TLPA1G6G-50-47-HS	Power amplifier 1-6GHz, Gain:50dB,Psat:47dBm,+28V DC,With Heatsink	Rev.2.0

## Typical Performance Data:

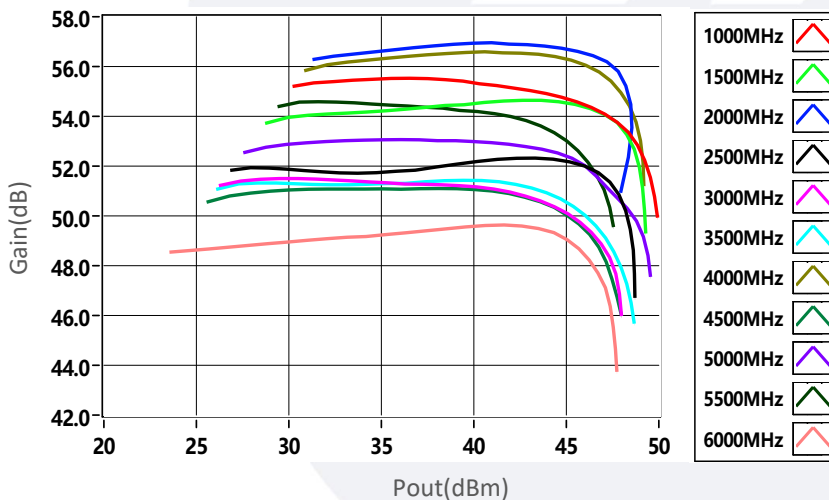
### Input VSWR vs Frequency



### Small Signal Gain vs Frequency



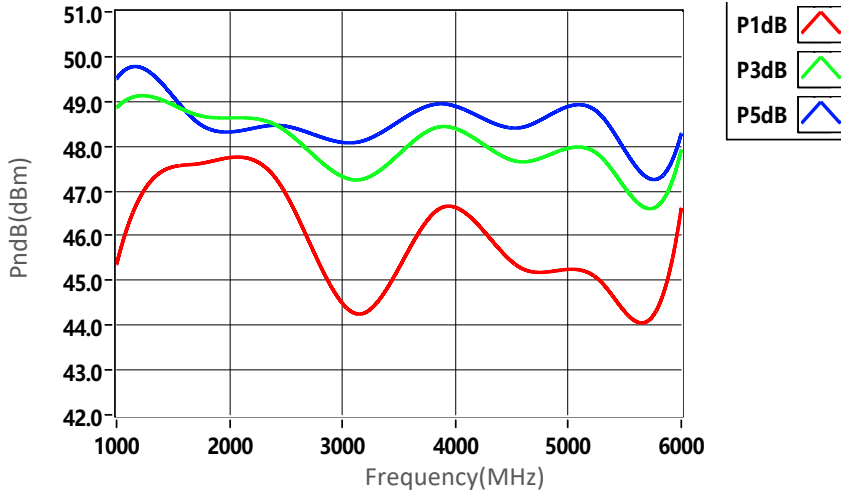
### Gain vs Output Power



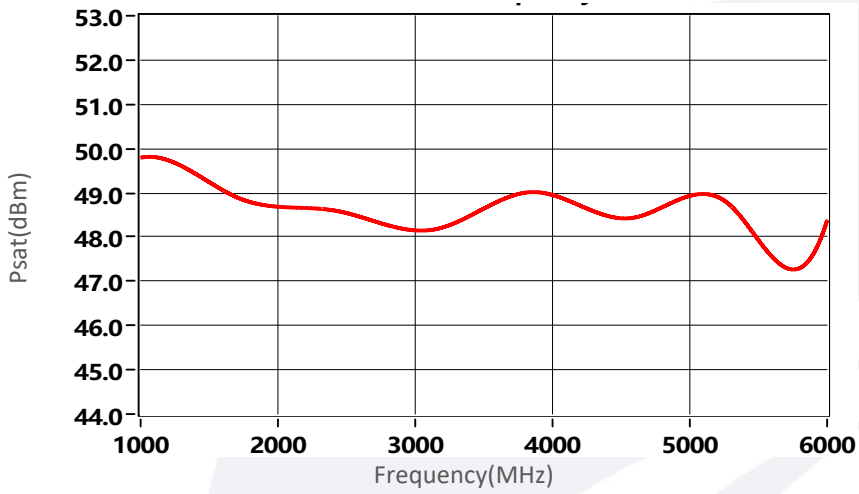
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

**Typical Performance Data:**

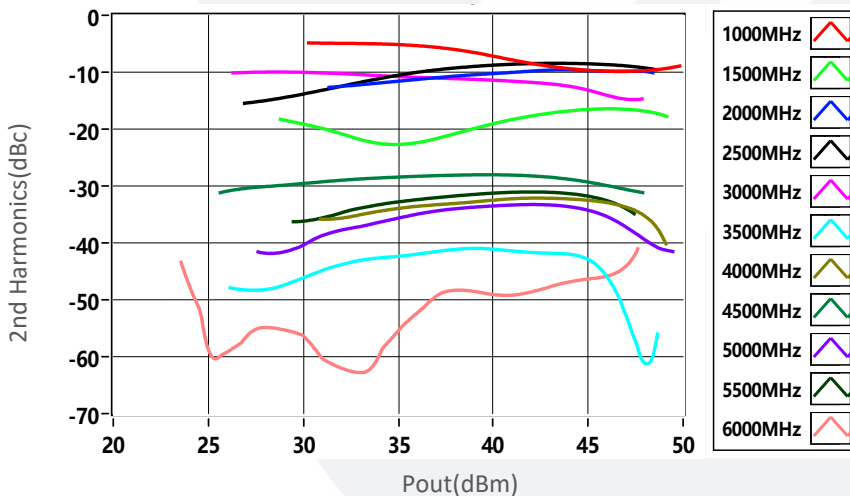
**PndB vs Frequency**



**Psat vs Frequency**



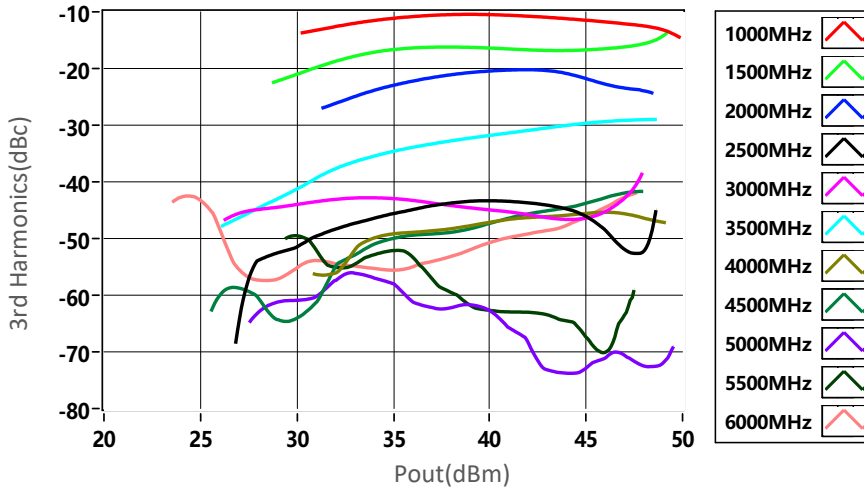
**2nd Harmonics vs Output Power**



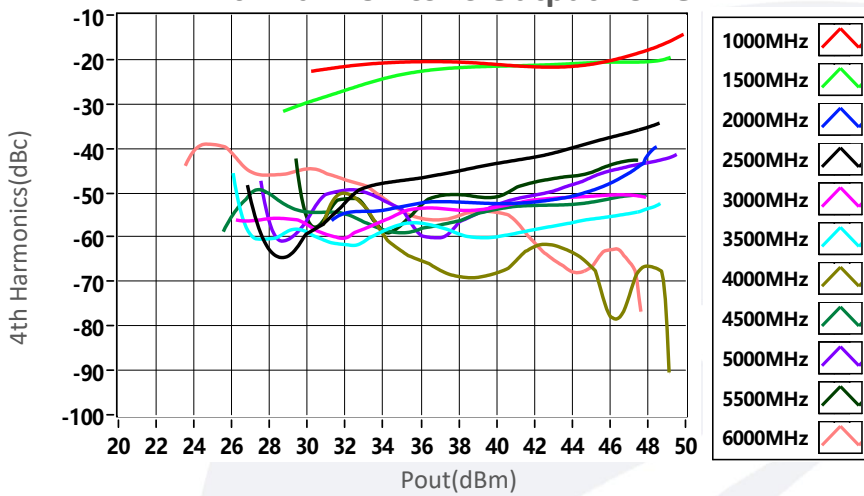
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**Typical Performance Data:**

**3rd Harmonics vs Output Power**



**4th Harmonics vs Output Power**



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