

Power Amplifier

0.5-6GHz/45dB Gain/46dBm Psat

Model: TLPA0.5G6G-45-46

TLPA0.5G6G-45-46 is a power amplifier with a typical power gain of 47 dB and a nominal Psat of 46 dBm across the frequency range of 0.5 to 6 GHz. The DC power requirement for the amplifier is +28 VDC/6A. The input and output ports configuration offers coax adapter structure with SMA female .

Features:

- Frequency range: 0.5-6 GHz
- Gain: 45dB Min
- Output Power Psat: 46dBm Typ
- 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	0.5		6	GHz
Small Signal Gain	45	47		dB
Gain Flatness		±4	±5	dB
Output P1dB	43	44		dBm
Output Psat	45	46		dBm
Harmonic		-15	-8	dBc
Input VSWR		1.5	2	:1
DC Voltage		28	30	V DC
Static Current		1		A
Saturation current		6	8	A
Impedance		50		Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/SMA Female	
DC Bias	Solder Pin	
Size	200*120*25(Without heatsink) 262.2*140*62(With heatsink)	mm
Weight	1.2	Kg

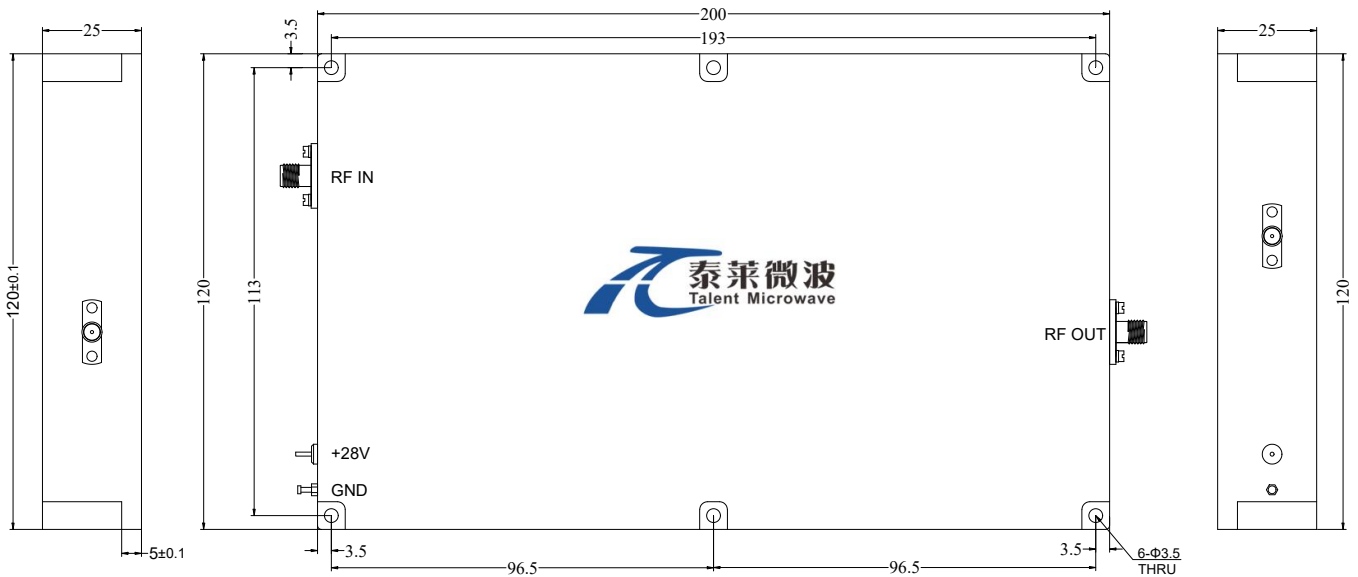
Absolute Maximum Ratings:

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



Outline Drawing:

Unit:mm



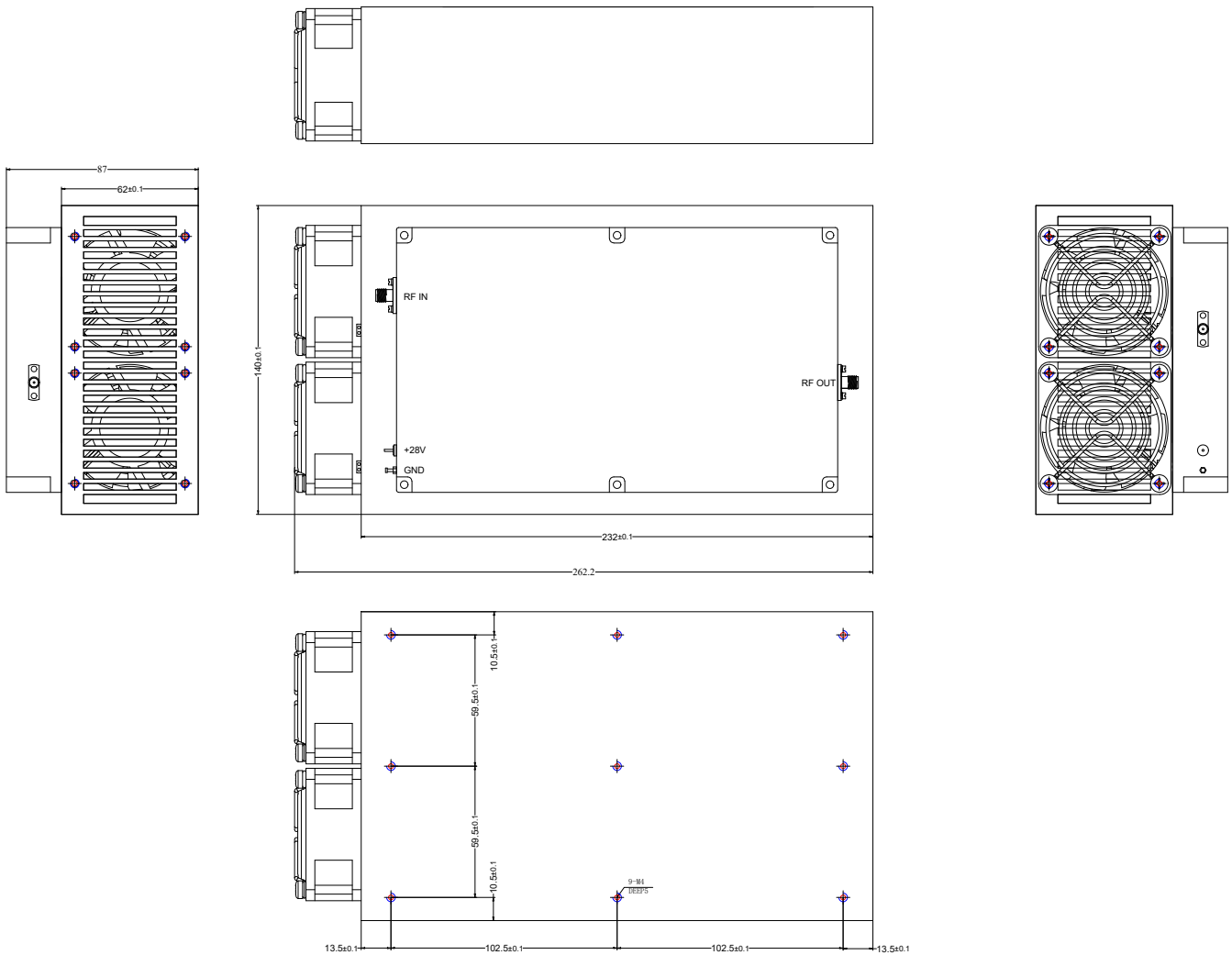
*****Heat Sink Required During Operation**



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

Outline Drawing:

Unit:mm



Fan power supply

Red line

Power supply positive, +24.0-28.0VDC
DC current: 0.3A

Black line

Ground

Instruction Manual:

Power on	
1	Connect ground and RF input connector
2	Connect the RF output port to the load (The VSWR of the load should be less than 3:1)
3	Connect the 24V power supply to the fan
4	Connect the 28V power supply to the amplifier
5	Turn on the RF signal and ensure that the input signal does not exceed 5dBm

Power off	
1	Turn off RF signal
2	Disconnect the 28V power supply to the amplifier
3	Disconnect the 24V power supply to the fan
4	Disconnect the RF connectors

Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature*	-40		+50	°C
Non-operating Temperature*	-50		+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			

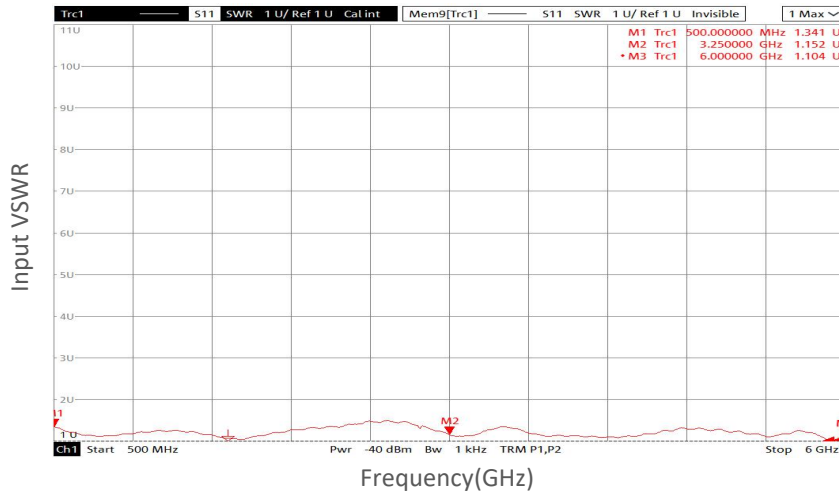
*Note: For a wider temperature range, please consult the manufacturer.

Ordering Information:

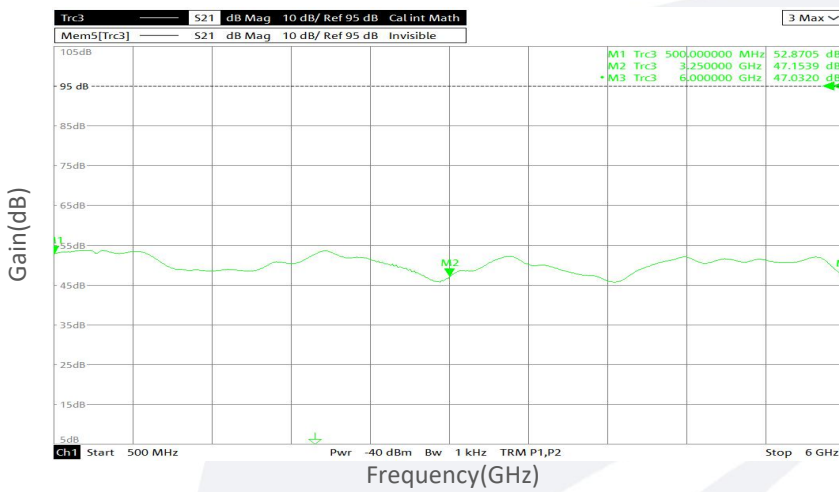
Base Number	Description	Revision
TLPA0.5G6G-45-46	Power amplifier 0.5-6GHz, Gain:45dB,Psat:46dBm,+28V DC,Without Heatsink	Rev.1.1
TLPA0.5G6G-45-46-HS	Power amplifier 0.5-6GHz, Gain:45dB,Psat:46dBm,+28V DC,With Heatsink	Rev.1.1

Typical Performance Data:

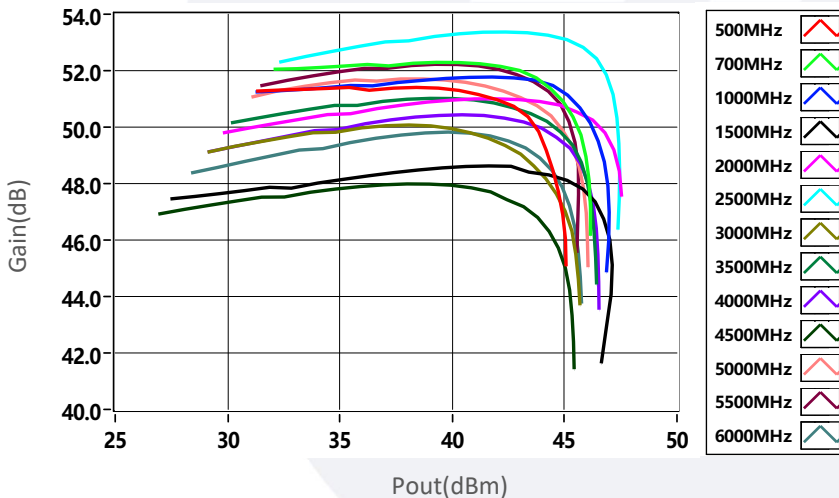
Input VSWR vs Frequency



Small Signal Gain vs Frequency



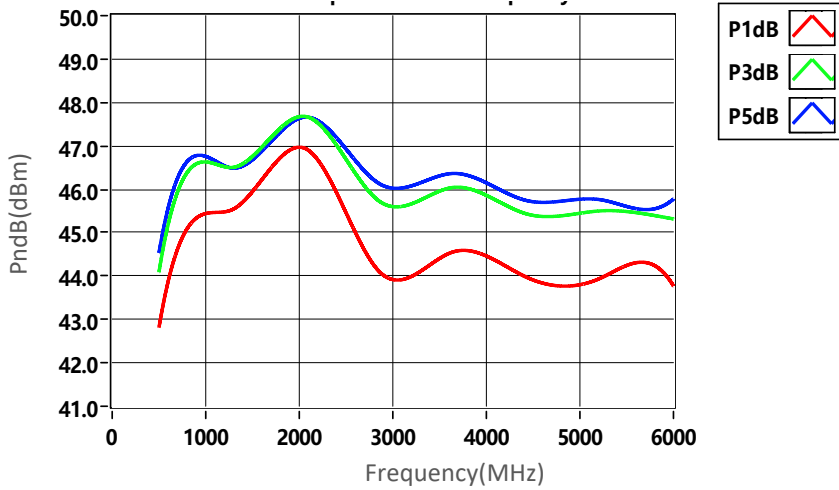
Gain vs Output Power



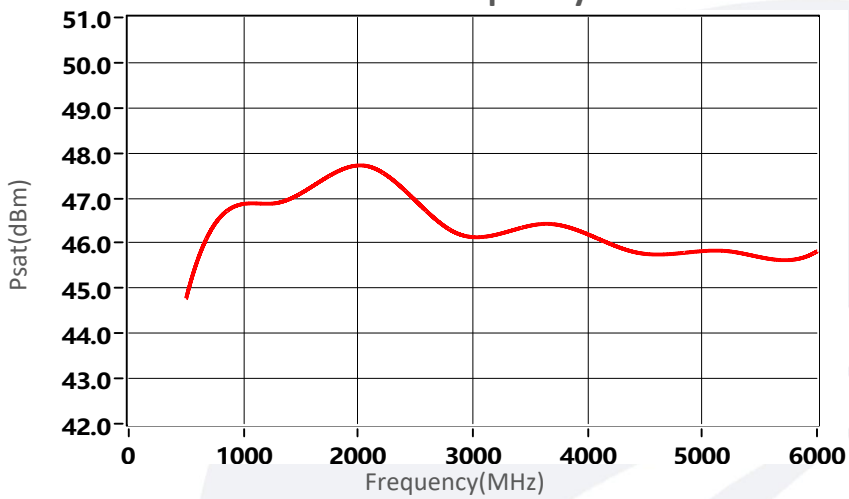
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

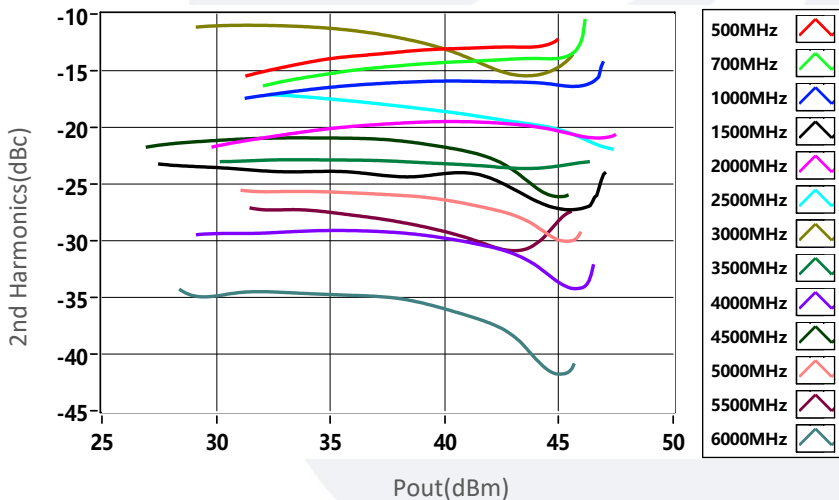
PndB vs Frequency



Psat vs Frequency



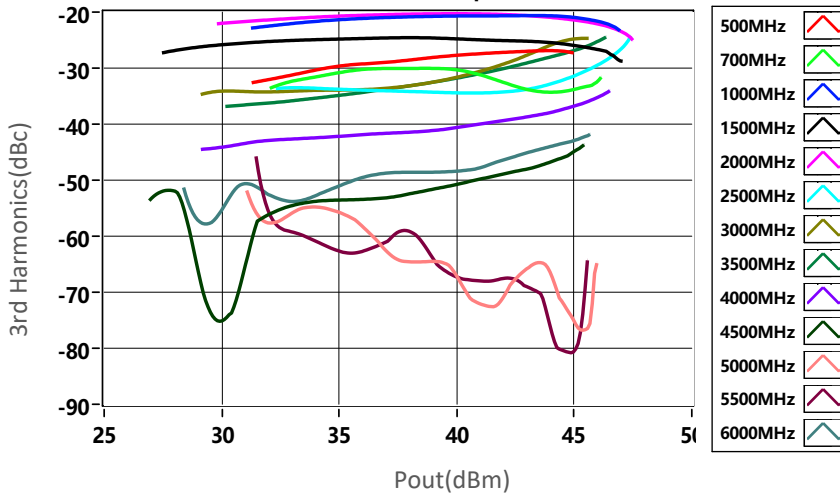
2nd Harmonics vs Output Power



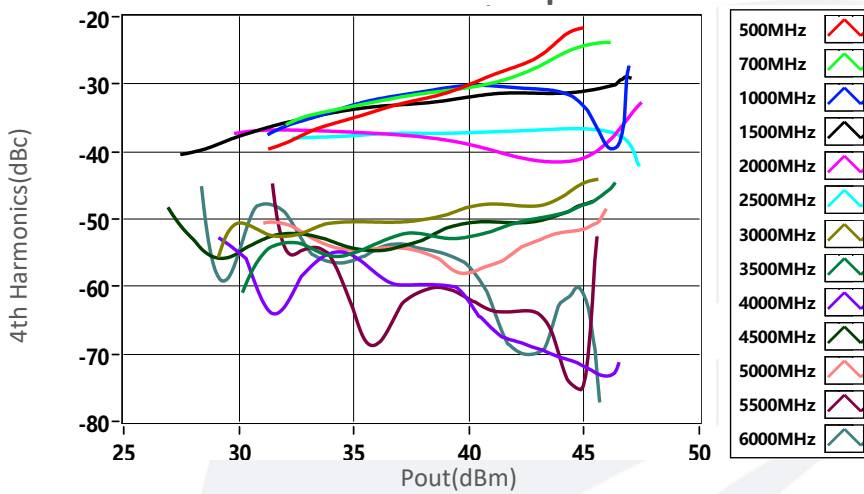
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Typical Performance Data:

3rd Harmonics vs Output Power



4th Harmonics vs Output Power



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