

Power Amplifier

10-500MHz /53dB Gain/53 dBm Psat

Model: TLPA10M500M-53-53

TLPA10M500M-53-53 is a power amplifier with a typical small signal gain of 53 dB and a nominal Psat of 53 dBm across the frequency range of 10 to 500 MHz. The DC power requirement for the amplifier is +36 VDC/3 A. The input and output port configuration offers coax adapter structure with SMA female and N female .

Features:

- Frequency range: 10-500MHz
- Gain: 53dB Typ
- Output Power : 53dBm 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	10-500			MHz
Small Signal Gain	50	53		dB
Gain Flatness		±2	±3	dB
Output P1dB	49	50		dBm
Output Psat	51.5	53		dBm
Input VSWR		1.5	2.0	:1
DC Voltage	34	36	38	V DC
Static Current		3		A
Saturation current		20	22	A
Impedance	50			Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/N Female	
DC Bias	D-SUB-9Pin	
Size	180*115*25(Without heatsink) 290.2*200*87(With heatsink)	mm
Weight(Without heatsink)	1000	g

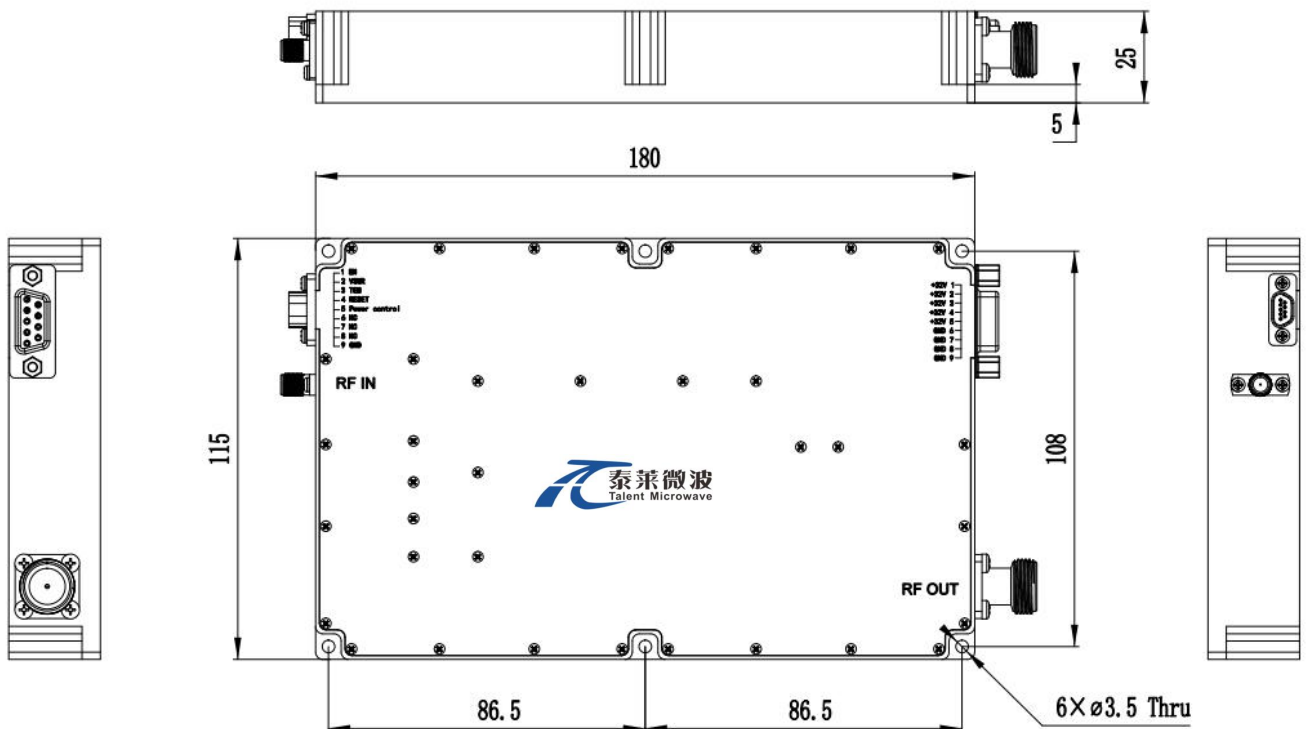
Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+38 V
RF Input Power	5dBm
ESD sensitivity (HBm)	Class 0, passed 150V



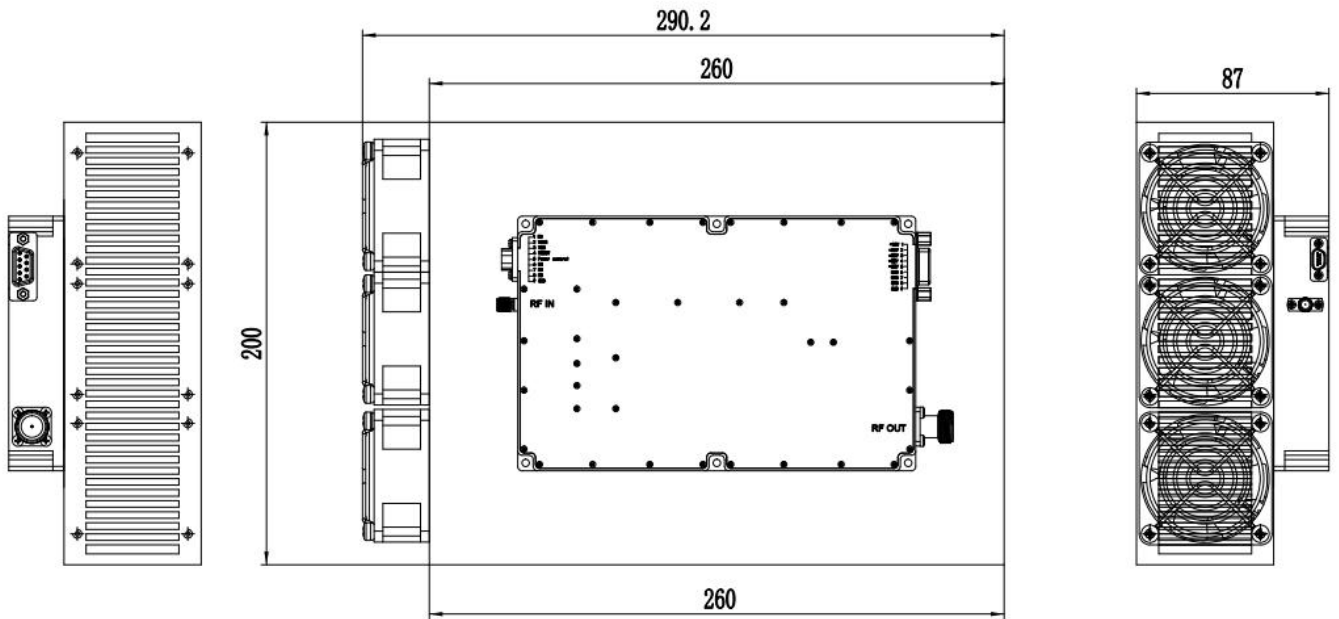

Outline Drawing:

Unit:mm



Outline Drawing:

Unit:mm

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

Fan power supply	
Red line	Power supply positive,+24.0-28.0VDC DC current: 0.3A
Black line	Ground

DC Supply Connector (D-SUB9 Female):

Pin	Name	Function
1~5	+36V	Power supply positive,+34.0-36.0VDC
6~9	GND	Ground

Control Connector (J30J-9ZKP Female):

Pin	Name	Function
1	EN	Amplifier Enable: TTL High (5V) (Internally Pulled-High) Amplifier Disable: Short to ground
2	Over VSWR	When the external standing wave of the power amplifier output is greater than 5, the power amplifier is turned off, and this pin will output a high level. When the external standing wave is less than 5, this pin outputs a low level.
3	Over TEM	When the temperature of the case exceeds 70 °C, the power amplifier will turn off and this pin will be pulled high. If the temperature of case drops to 60 °C, the power amplifier will return to normal operation, and this pin will be pulled low.
4	Reset	When the power amplifier triggers VSWR protection, the power amplifier will shut down and enter a state lock. Giving this pin a low pulse of 10ms will restart the power amplifier. Only VSWR protection can be reset.
5	Power control	The control voltage input terminal of the voltage-controlled attenuation ranges from 0 to 7V, with an attenuation range of 30dB to 0dB. From 2 to 7V, the attenuation is The reduction is from 10 dB to 0 dB.
6~8	NC	Not Connected
9	GND	Ground

Environmental Conditions:

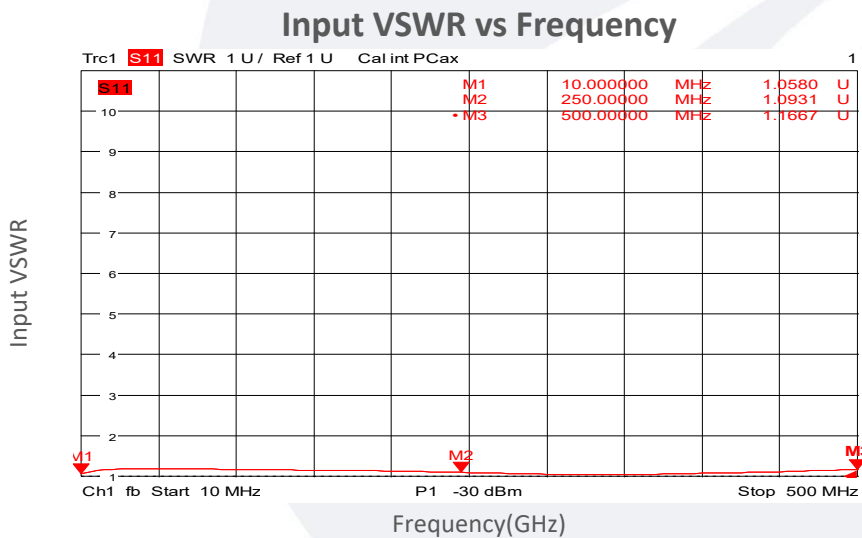
Parameter	Min	Typ	Max	Units
Operating Temperature*	-45		+75	°C
Non-operating Temperature*	-55		+125	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

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

Ordering Information:

Base Number	Description	Revision
TLPA10M500M-53-53	Power amplifier 10-500MHz,Gain:53dB,Psat:53dBm, +36V DC,Without Heatsink	Rev.1.2
TLPA10M500M-53-53-HS	Power amplifier 10-500MHz,Gain:53dB,Psat:53dBm, +36V DC,With Heatsink	Rev.1.2

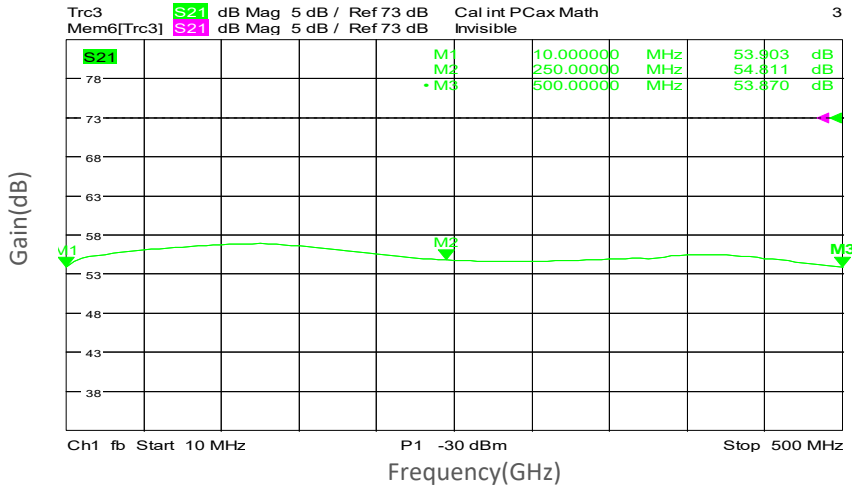
Typical Performance Data:



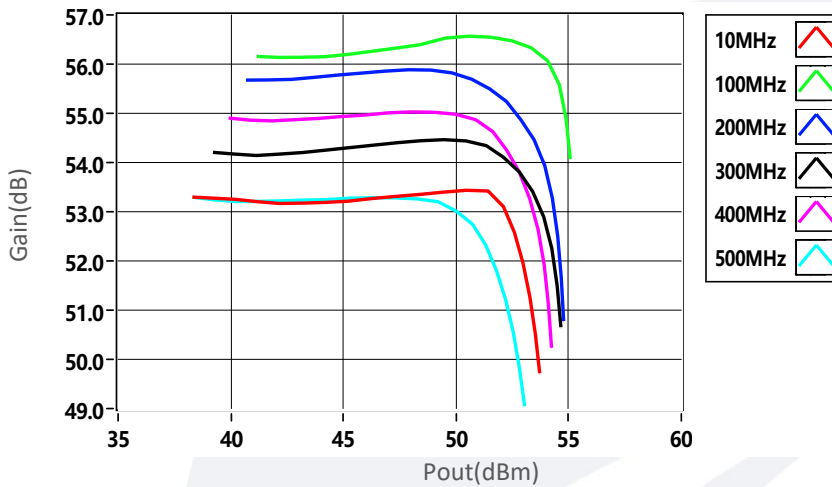
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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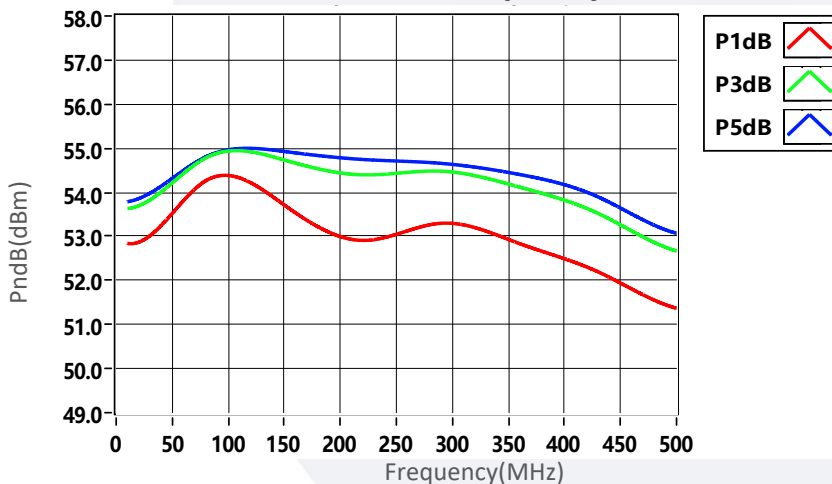
Small Signal Gain vs Frequency



Gain vs Output Power



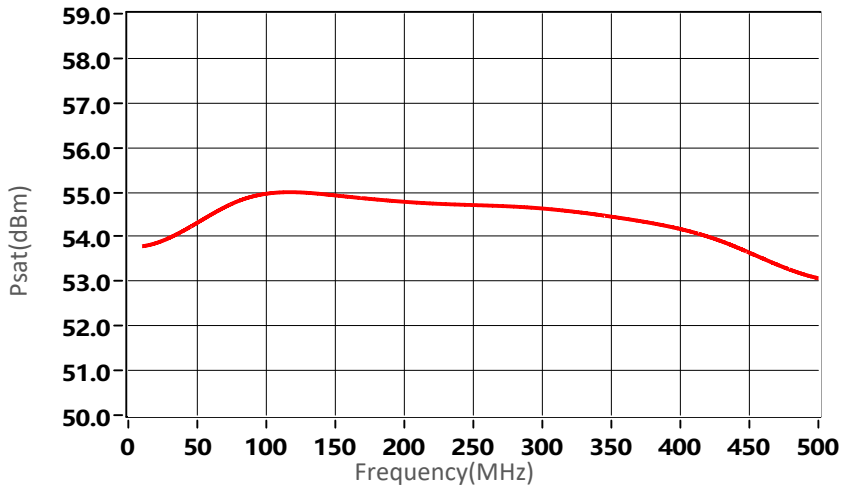
PndB vs Frequency



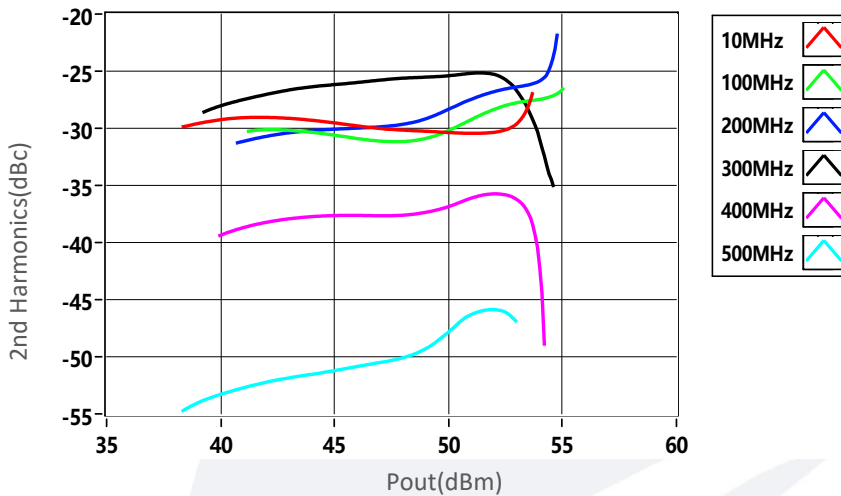
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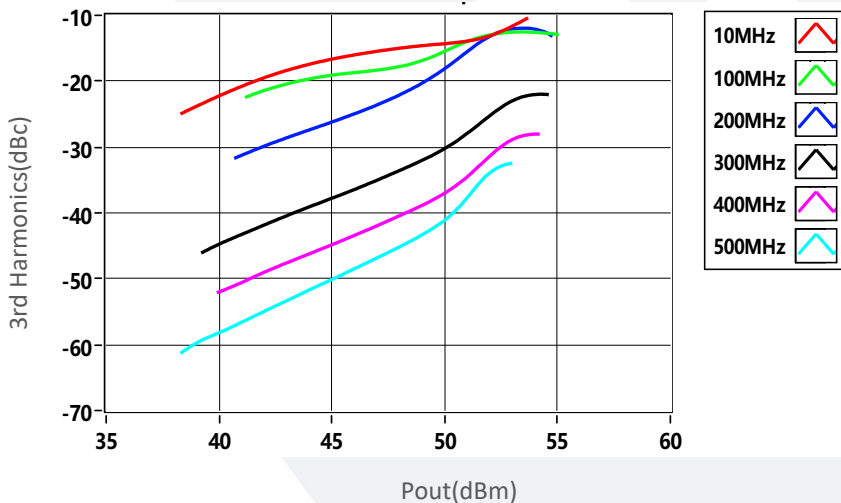
Psat vs Frequency



2nd Harmonics vs Output Power



3rd Harmonics vs Output Power



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