

Power Amplifier

80-1000MHz/50dB Gain/50dBm Psat

Model: TLP80M1000M-50-50

TLP80M1000M-50-50 is a power amplifier with a minimum small signal gain of 50 dB and a minimum Psat of 50 dBm across the frequency range of 80 to 1000 MHz. The DC power requirement for the amplifier is +28 VDC/15 A. The input and output port configuration offers coax adapter structure with SMA female.

Features:

- Frequency range: 80-1000MHz
- Gain: 50dB Min
- Output Power : 50dBm 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	80		1000	MHz
Small Signal Gain	50	52		dB
Gain Flatness		±2	±3	dB
Output P1dB	47	47.5		dBm
Output Psat	50	50.5		dBm
Harmonics		-15	-8	dBc
Input VSWR		1.5	2.0	:1
DC Voltage		+28	+30	V DC
Static Current		2		A
Saturation current		13	15	A
Impedance		50		Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/SMA Female	
DC Bias	D-SUB-9	
Size	170*80*20(Without heatsink) 232*140*82(With heatsink)	mm
Weight	500	g

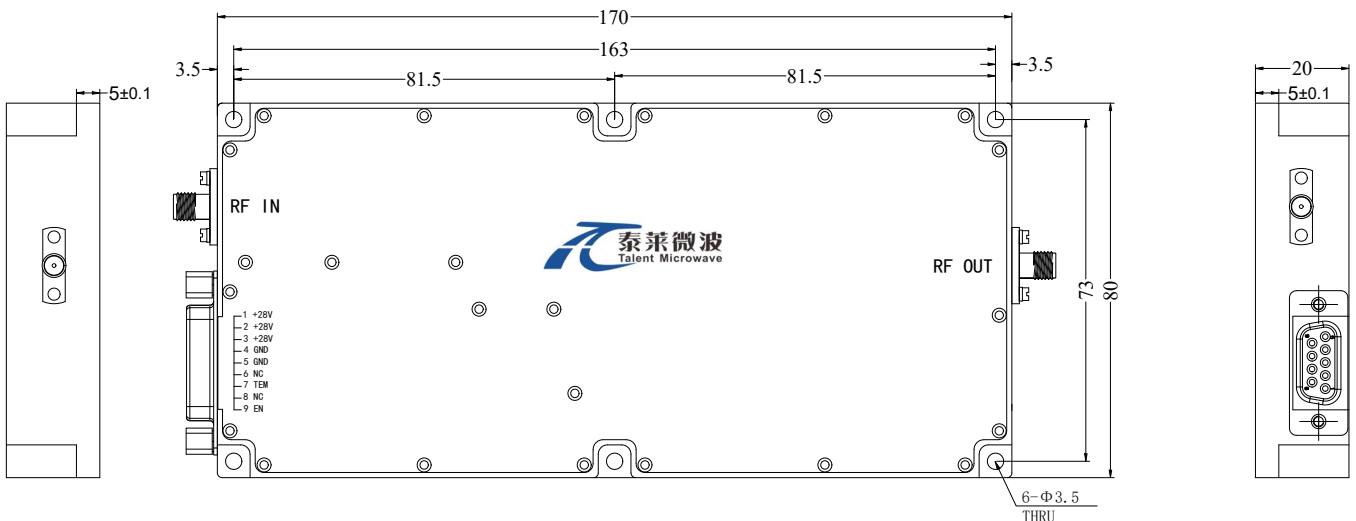
Absolute Maximum Ratings:

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



Outline Drawing:

Unit:mm



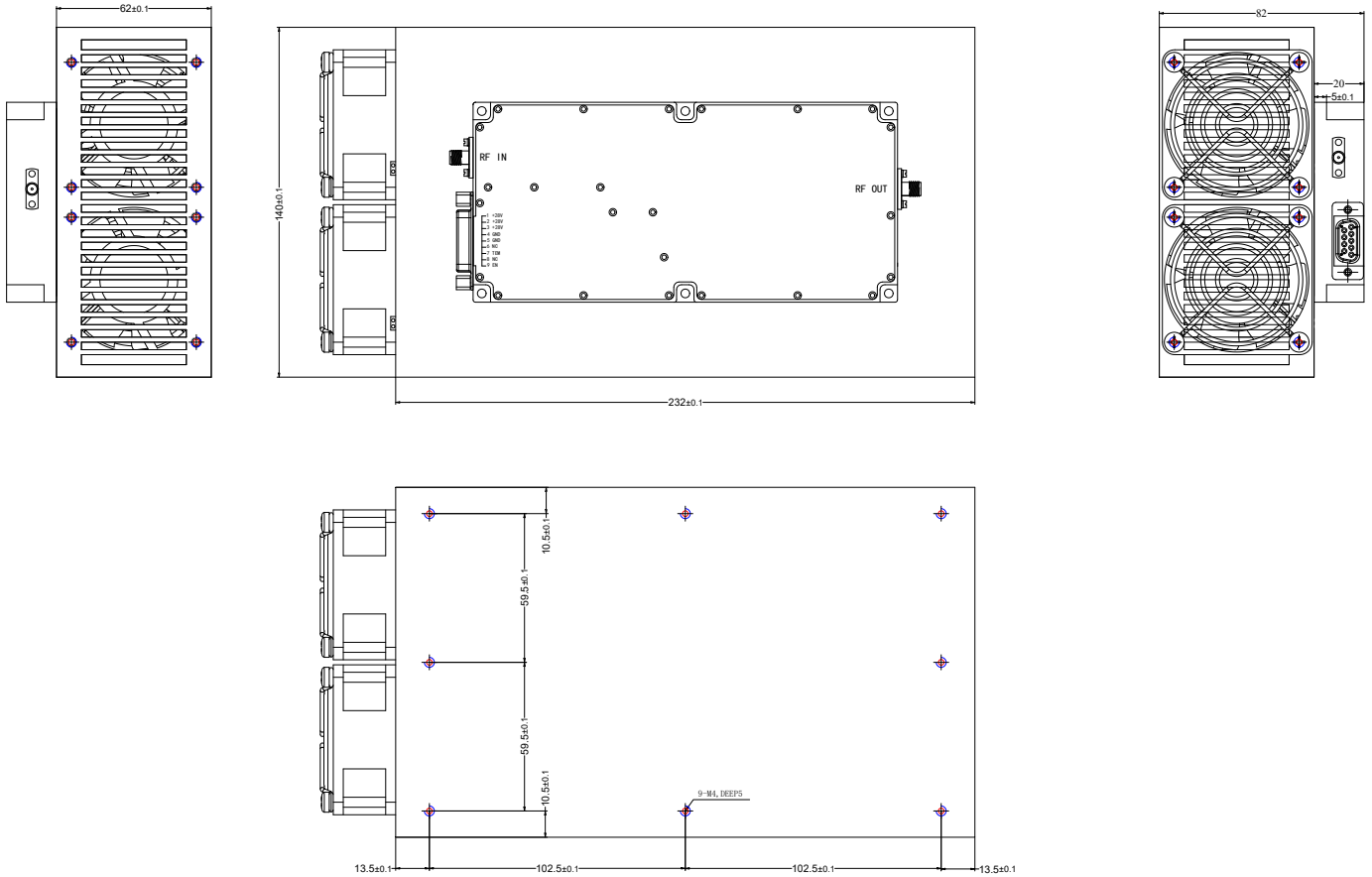
*****Heat Sink Required During Operation**



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

Outline Drawing:

Unit:mm



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
1~3	+36V	Power supply positive,+34.0-36.0VDC
4~5	GND	Ground
6、8	NC	Not connected
7	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 80 °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

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:

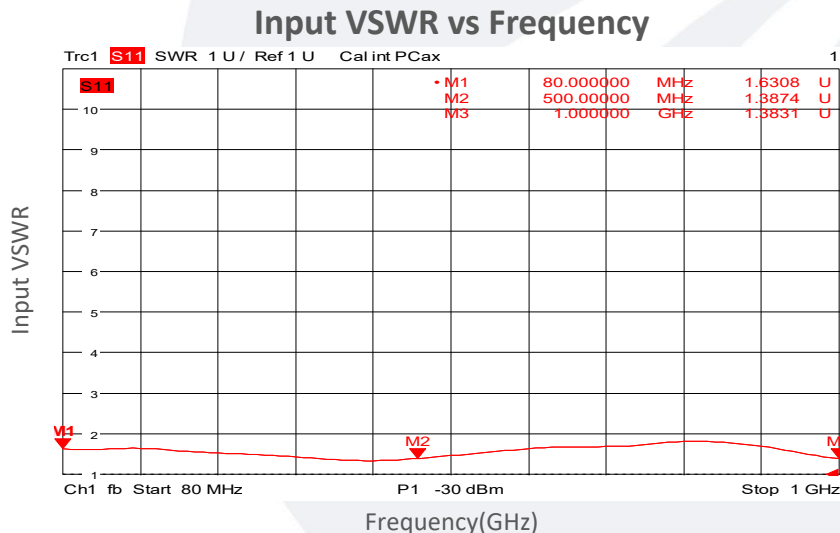
Parameter	Min	Typ	Max	Units
Operating Temperature*	-20		+50	°C
Non-operating Temperature*	-30		+60	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

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

Ordering Information:

Base Number	Description	Revision
TLPA80M1000M-50-50	Power amplifier 80-1000MHz, Gain:50dB,Psat:50dBm,+28V DC,Without Heatsink	Rev.1.1
TLPA80M1000M-50-50-HS	Power amplifier 80-1000MHz, Gain:50dB,Psat:50dBm,+28V DC,With Heatsink	Rev.1.1

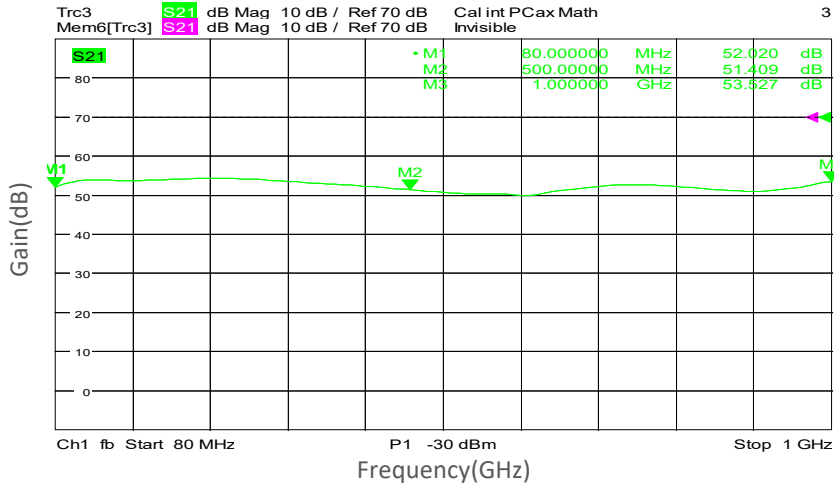
Typical Performance Data:



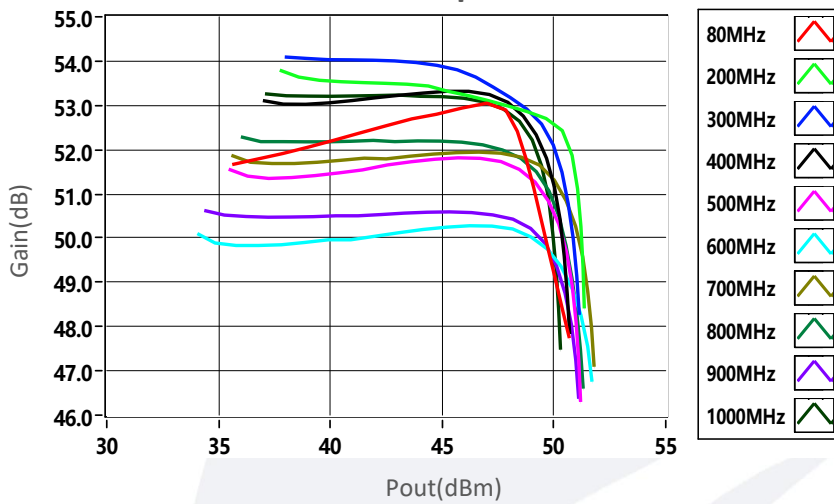
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

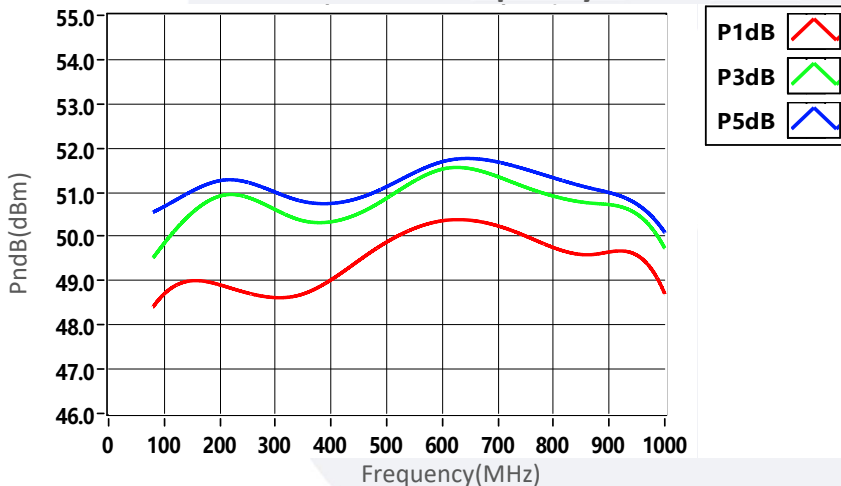
Small Signal Gain vs Frequency



Gain vs Output Power



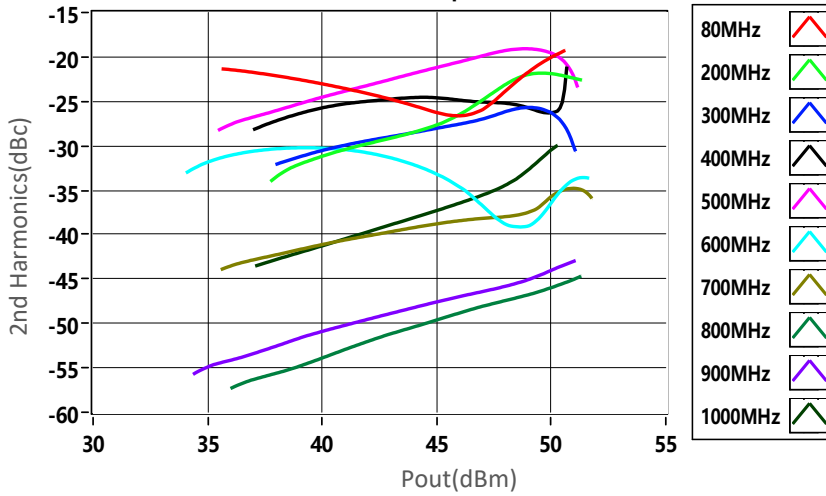
PndB vs Frequency



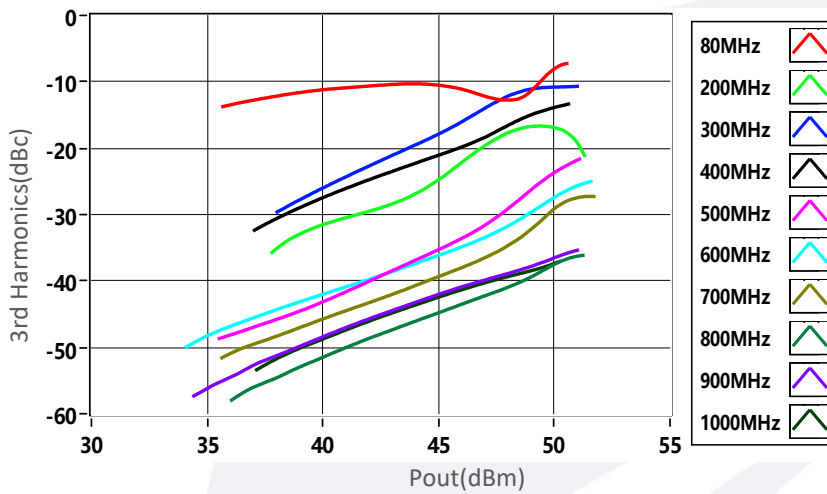
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Typical Performance Data:

2nd Harmonics vs Output Power



3rd Harmonics vs Output Power



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