

Power Amplifier

100KHz-250MHz/50dB Gain/50dBm Psat**Model: TLPA100K250M-50-50**

TLPA100K250M-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 100KHz to 250 MHz. The DC power requirement for the amplifier is +28 VDC/1.8 A. The input and output port configuration offers coax adapter structure with SMA female.

Features:

- Frequency range: 100KHz-250MHz
- Gain: 50dB Min
- Output Power Psat: 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	100KHz		250MHz	
Small Signal Gain	50	52		dB
Gain Flatness		±3	±5	dB
Output Psat	50	51		dBm
Harmonic@Pout=50dBm		-12		dBc
Input VSWR		1.5	2	:1
DC Voltage	+26	+28	+30	V DC
DC Supply Current		1.8	18	A
Impedance	50			Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/N Female	
DC Supply	DB9	
Size	255*130*35(Without Heatsink) 292*200*97(With Heatsink)	mm
Weight	500	g

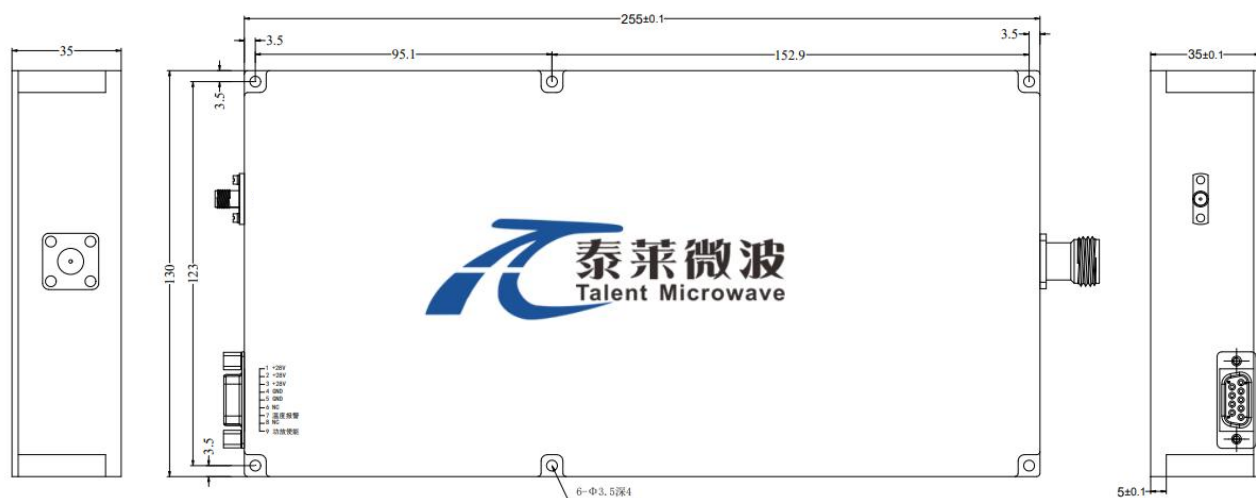
Absolute Maximum Ratings:

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



Outline Drawing:

Unit:mm; Tolerance:±0.1mm



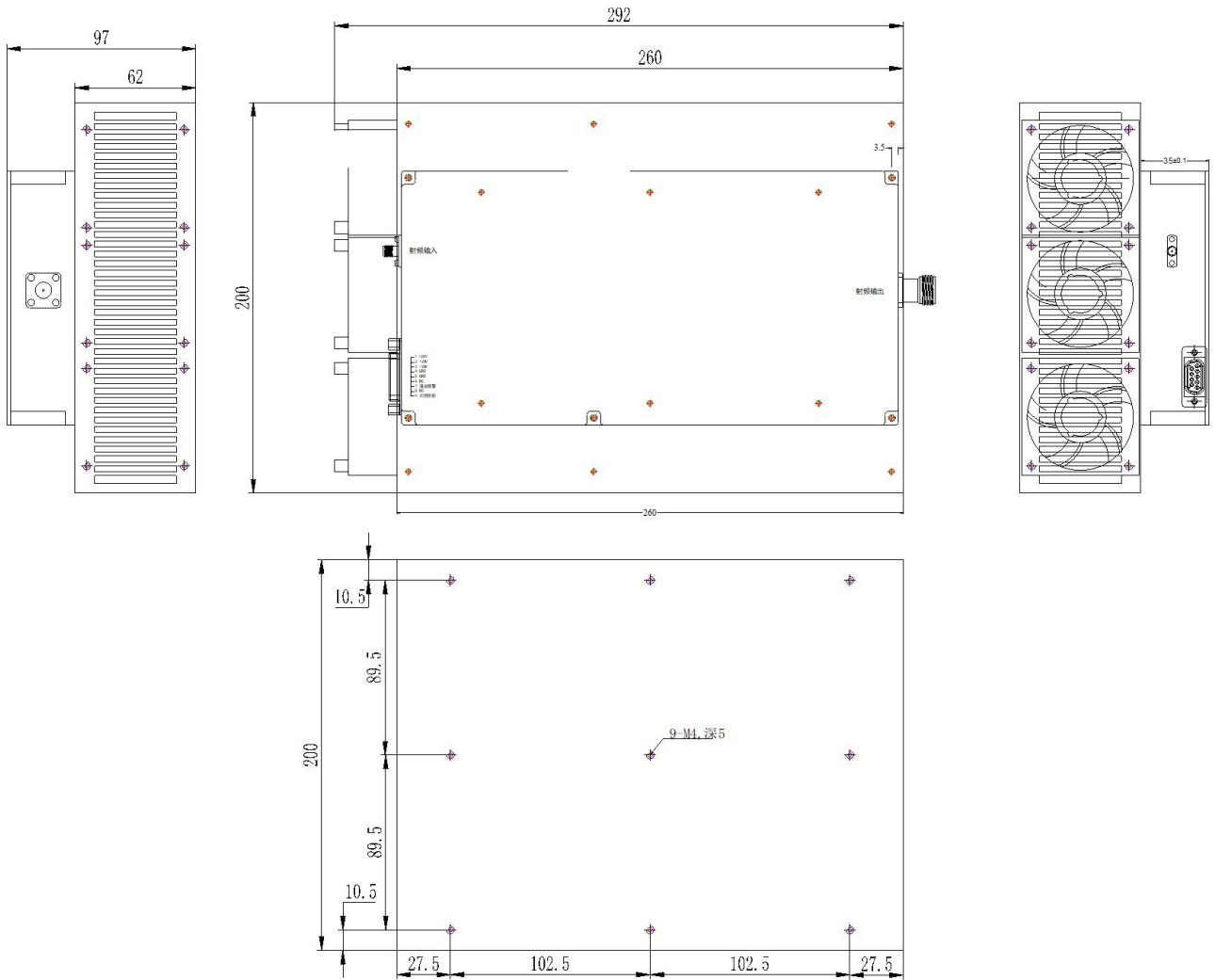
*****Heat Sink Required During Operation**



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

Outline Drawing:

Unit:mm; Tolerance:±0.1mm



Fan power supply

Red line	Power supply positive, +24VDC DC current: 0.2A
Black line	Ground

DC Supply Connector (DSUB-9 Female):

Pin	Name	Function
1	+28V	Power supply positive,+26.0-30.0VDC.
2	+28V	Power supply positive,+26.0-30.0VDC.
3	+28V	Power supply positive,+26.0-30.0VDC.
4	GND	Ground
5	GND	Ground
6	NC	Not connected
7	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.
8	NC	Not connected
9	EN	Amplifier Enable: TTL High (5V) (Internally Pulled-High) Amplifier Disable: Short to ground

Notes: 1,TTL is 5V. 2,Optional radiator fan power supply, 24V/0.2A

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			

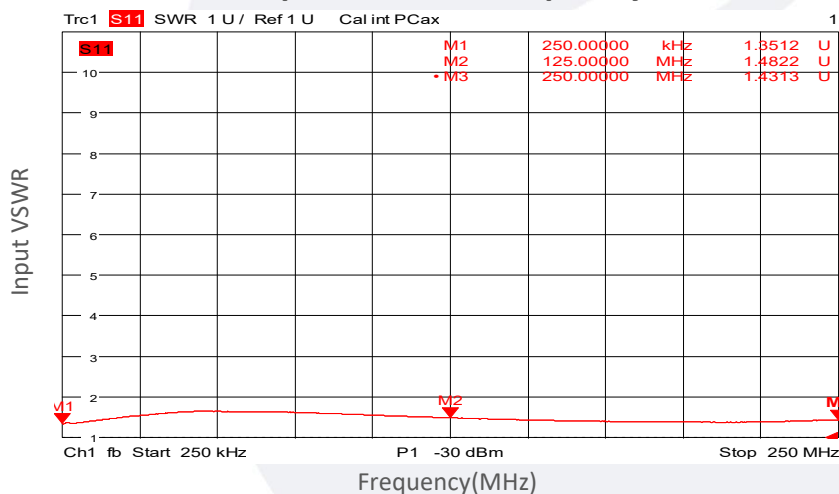
*Note: For a wider temperature range, please consult the manufacturer.

Ordering Information:

Base Number	Description	Revision
TLPA100K250M-50-50	Power amplifier 100KHz-250MHz, Gain:50dB,Psat:50dBm,+28V DC,Without Heatsink	Rev.1.1
TLPA100K250M-50-50-HS	Power amplifier 100KHz-250MHz, Gain:50dB,Psat:50dBm,+28V DC,With Heatsink	Rev.1.1

Typical Performance Data:

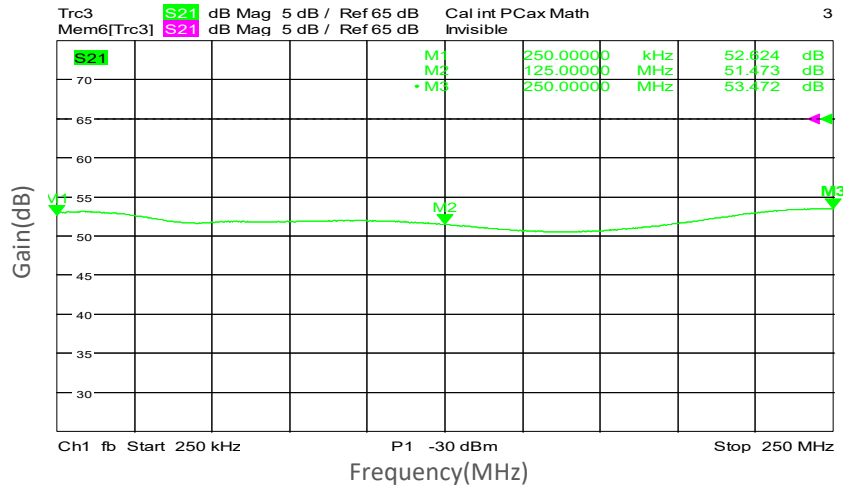
Input VSWR vs Frequency



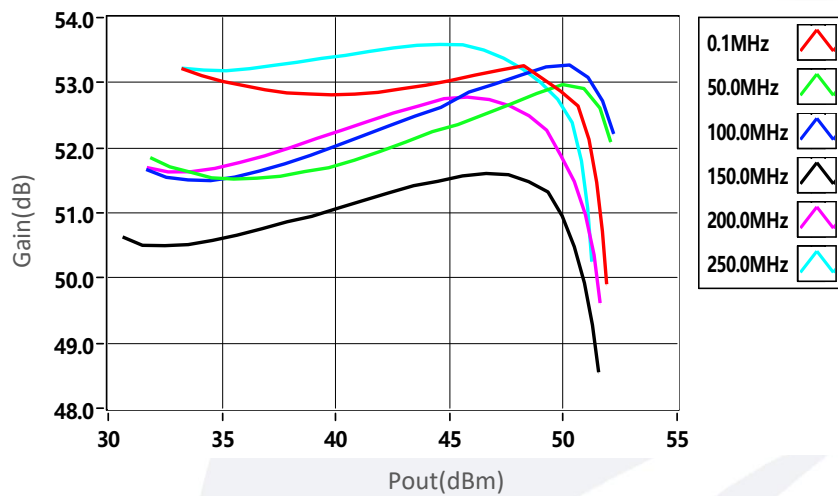
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

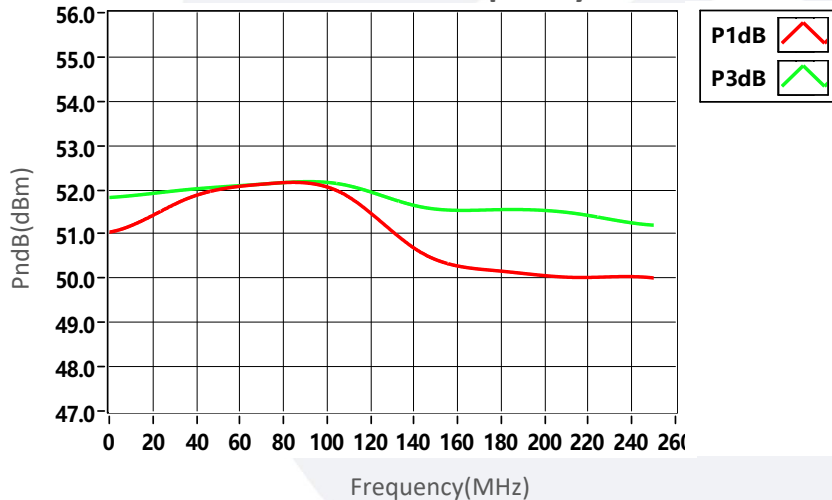
Small Signal Gain vs Frequency



Gain vs Output Power



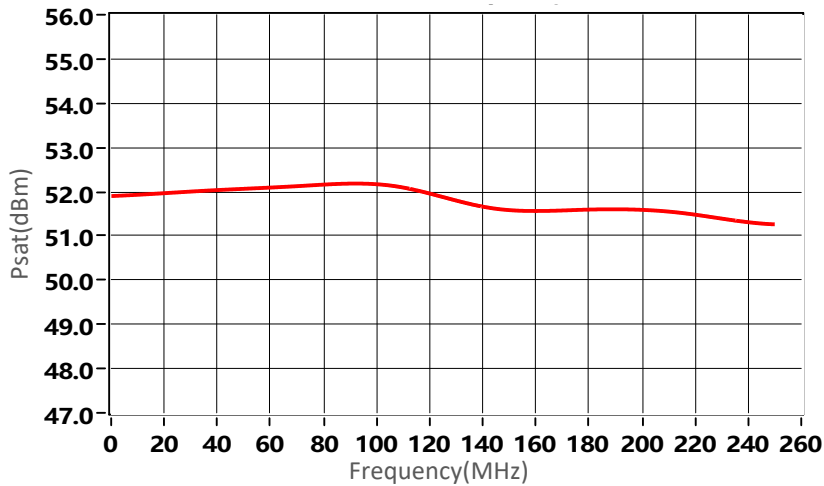
PndB vs Frequency



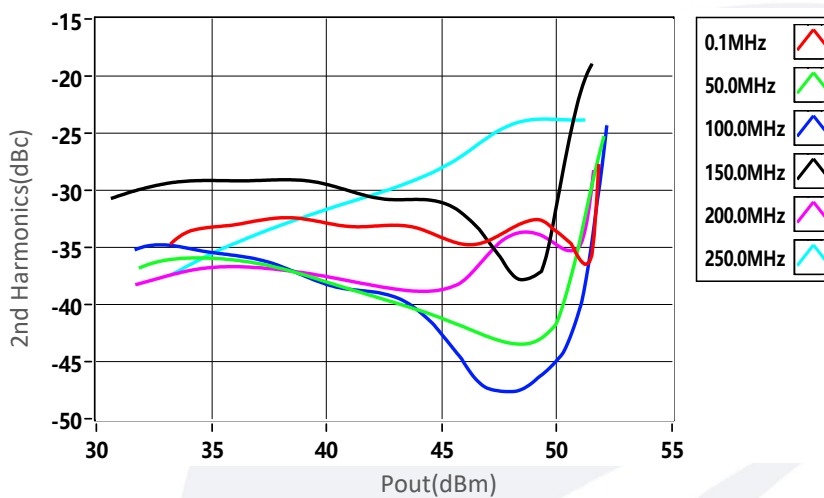
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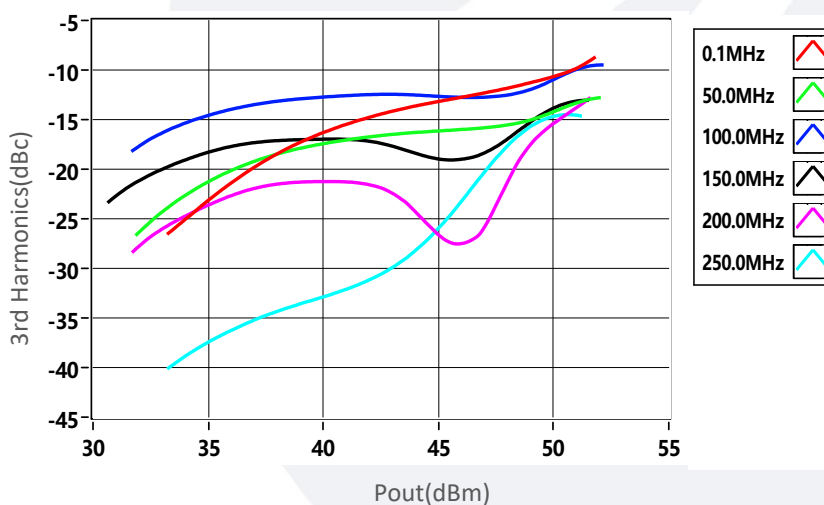
Psat vs Frequency



2nd Harmonics vs Output Power



3rd Harmonics vs Output Power



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