

Power Amplifier

2.9-3.1GHz/50dB Gain/50dBm Psat

Model: TLPA2.9G3.1G-50-50-HS

TLPA2.9G3.1G-50-50-HS 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 2.9 to 3.1 GHz. The DC power requirement for the amplifier is +28 VDC/15 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: 2.9-3.1GHz
- 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

电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
频率范围 Frequency range	2.9		3.1	GHz
小信号增益 Small Signal Gain	50	52		dB
增益平坦度 Gain Flatness		±1	±1.5	dB
饱和输出功率 Output Psat	50	51		dBm
杂散 Supurious			-60	dBc
谐波抑制 Harmonics		-25	-20	dBc
输入驻波 Input VSWR			2.0	:1
直流电压 DC Voltage		+28		V DC
直流电流 DC Supply Current		15		A
阻抗 Impedance		50		Ohms

机械特性 Mechanical Specifications:

参数 Parameter	指标 Value	单位 Units
输入/输出接口 Input /Output Connector	SMA Female/N Female	
直流供电接口 DC Power Supply Connector	D-SUB 9PIN	
尺寸 Size	200*130*20	mm

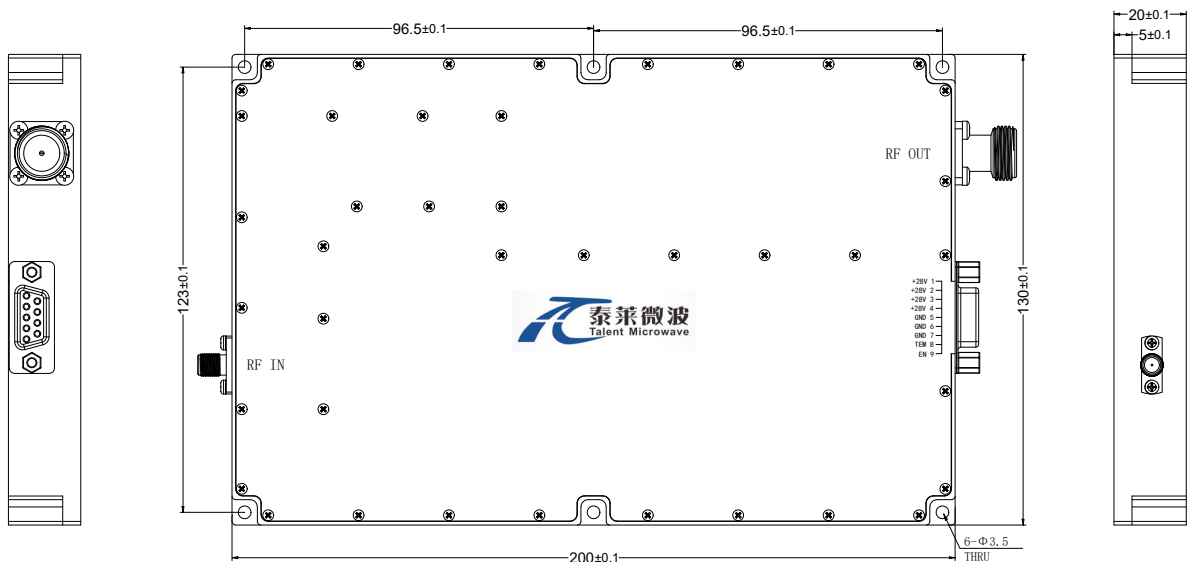
绝对最大值 Absolute Maximum Ratings:

参数 Parameter	指标 Value
供电偏置电压 Supply Bias Voltage	+30 V
输入功率 RF Input Power	+5 dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V



外形图 Outline Drawing:

Unit:mm



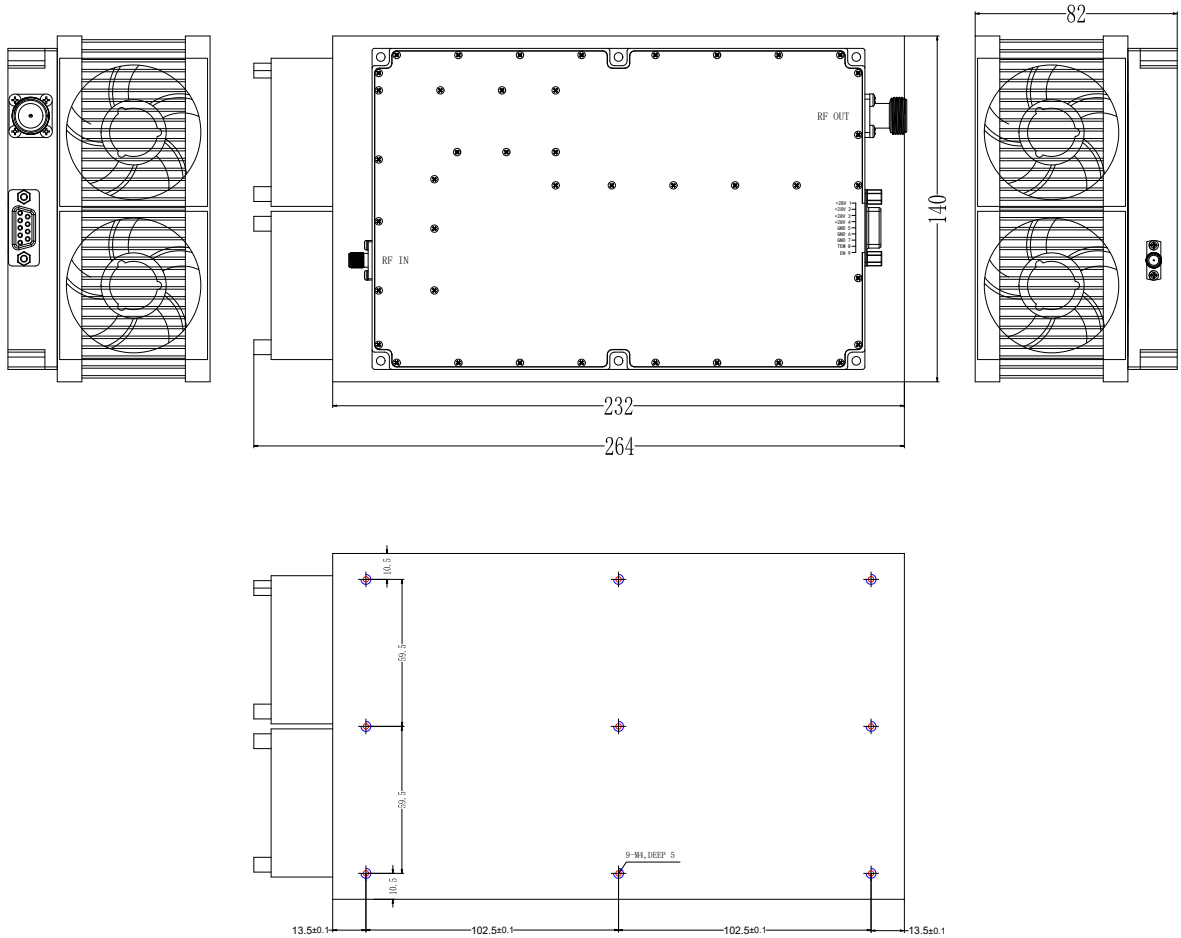
*****Heat Sink Required During Operation**



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

外形图 Outline Drawing:

Unit:mm



风扇供电 Fan power supply

Red line	Power supply positive, +24VDC DC current: 0.4A
Black line	Ground

直流供电接口 DC Supply Connector(DSUB-9 Female):

引脚 Pin	名称 Name	功能 Function
1	+28V	+26.0-30.0VDC
2	+28V	+26.0-30.0VDC
3	+28V	+26.0-30.0VDC
4	+28V	+26.0-30.0VDC
5	GND	Ground
6	GND	Ground
7	GND	Ground
8	Over Temperature	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.
9	EN	Amplifier Enable: TTL High (5V) (Internally Pulled-High)

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature*	-20		+50	°C
存储温度 Non-operating Temperature*	-30		+60	°C
相对湿度 Relative humidity		95		%
海拔 Altitude		10,000		feet
震动 Shock / Vibration(MIL-STD-810F)		20g,11ms,saw-tooth		
冲击 Shock(non operating)		20G for 11msc half sin wave,3 axis both directions		

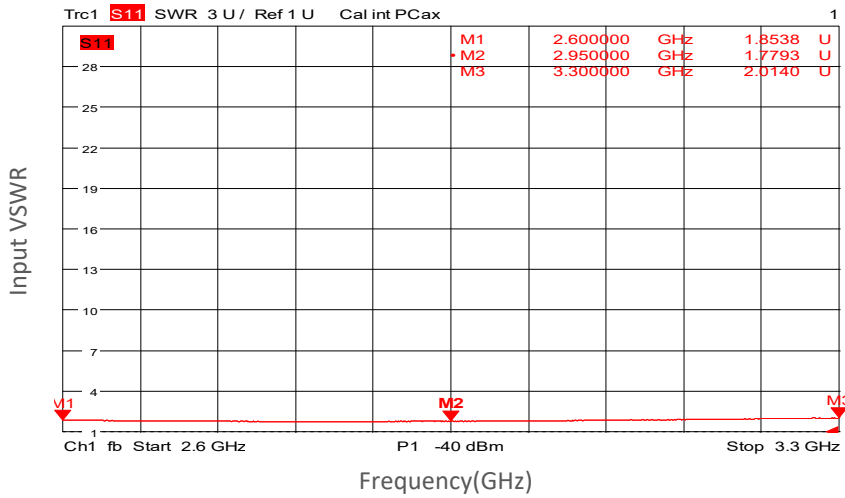
*Note: For a wider temperature range, please consult the manufacturer.

订货信息 Ordering Information:

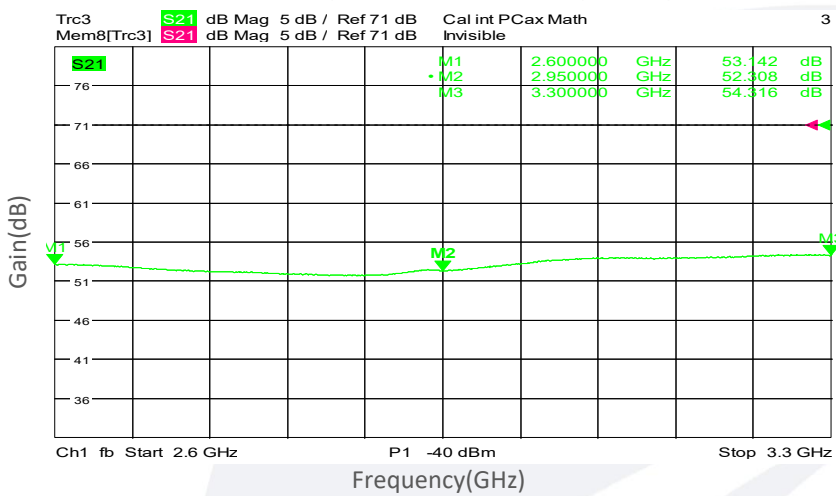
标准型号 Base Number	描述 Description	版本号 Revision
TLPA2.9G3.1G-50-50	Power amplifier 2.9-3.1GHz, Gain:50dB,Psat:50dBm,+28V DC,Without Heatsink	Rev.1.1
TLPA2.9G3.1G-50-50-HS	Power amplifier 2.9-3.1GHz, Gain:50dB,Psat:50dBm,+28V DC,With Heatsink	Rev.1.1

典型曲线 Typical Performance Data:

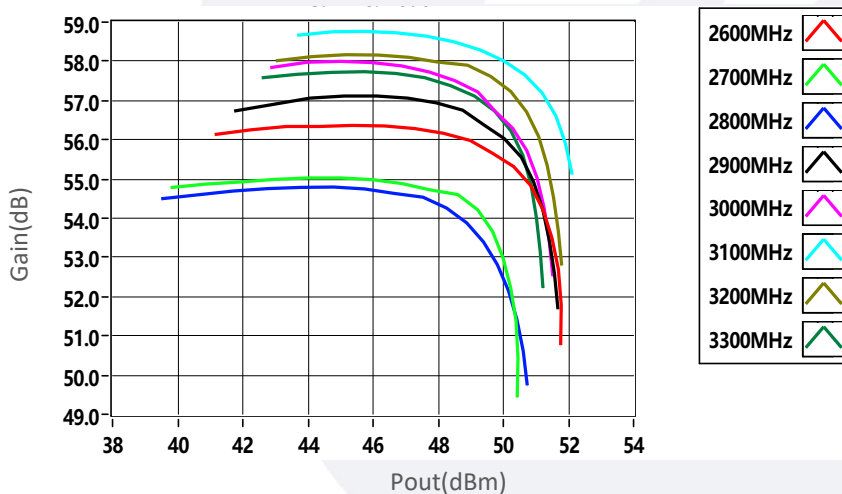
Input VSWR vs Frequency



Small Signal Gain vs Frequency



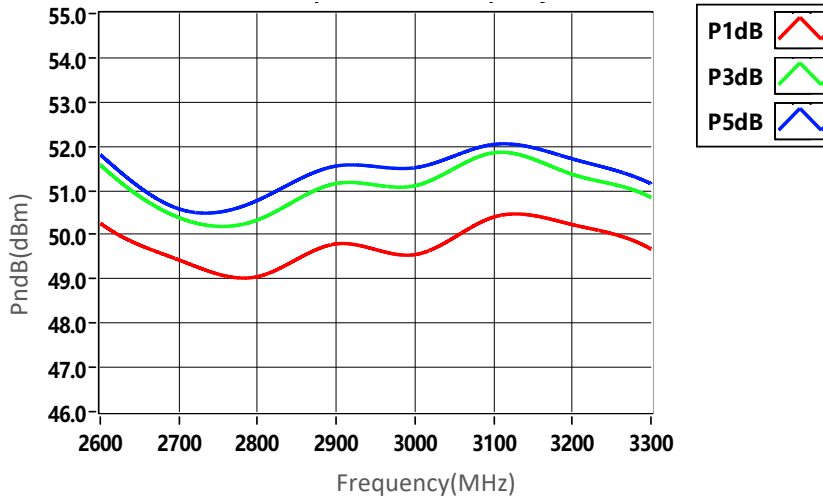
Gain vs Output Power



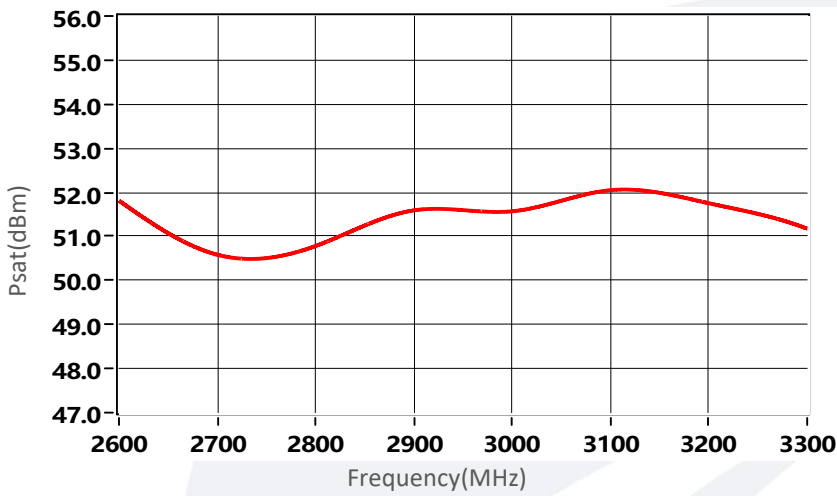
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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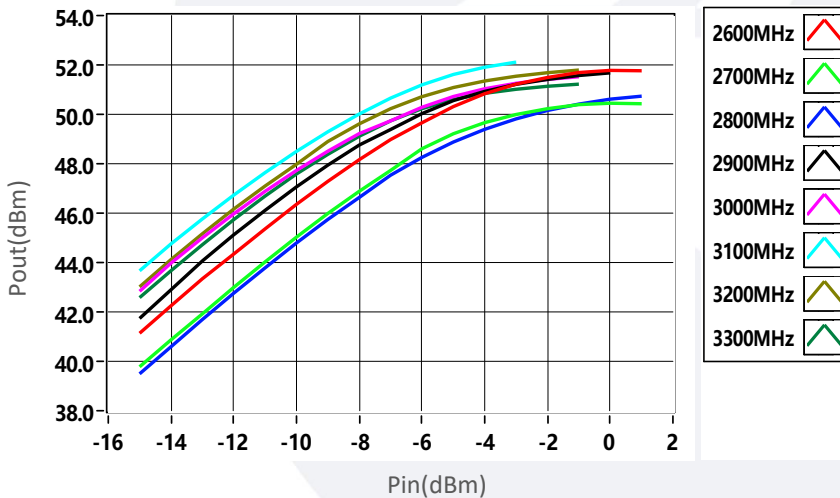
PndB vs Frequency



Psat vs Frequency



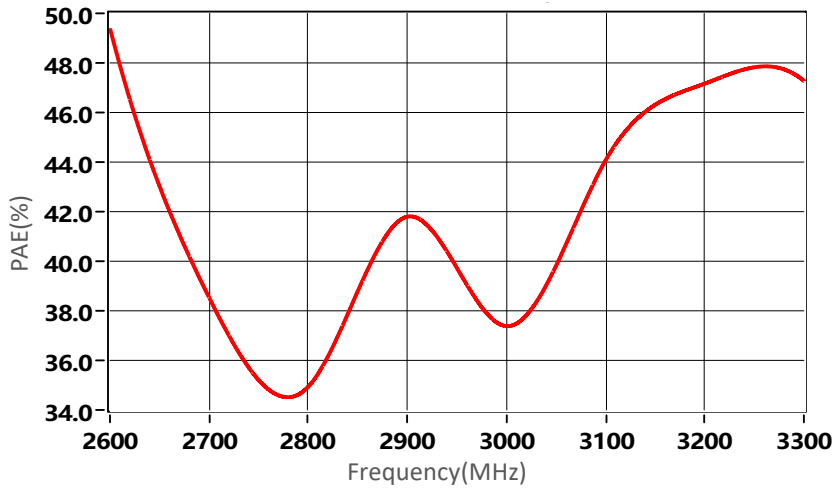
Pout vs Pin



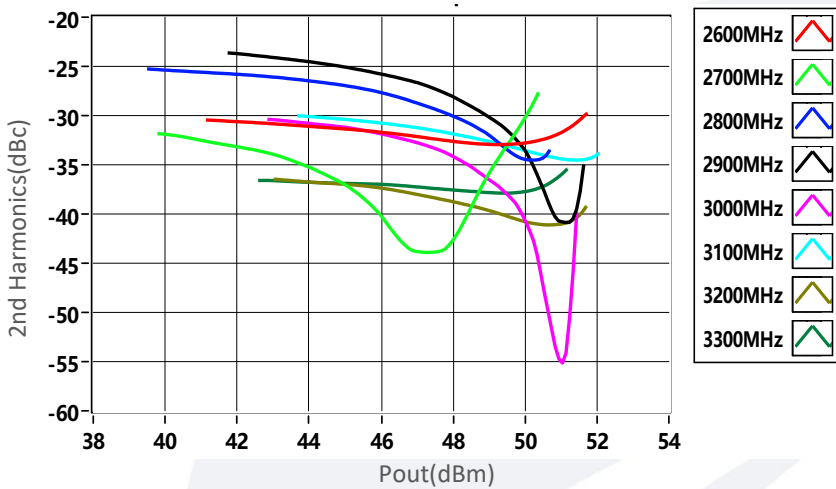
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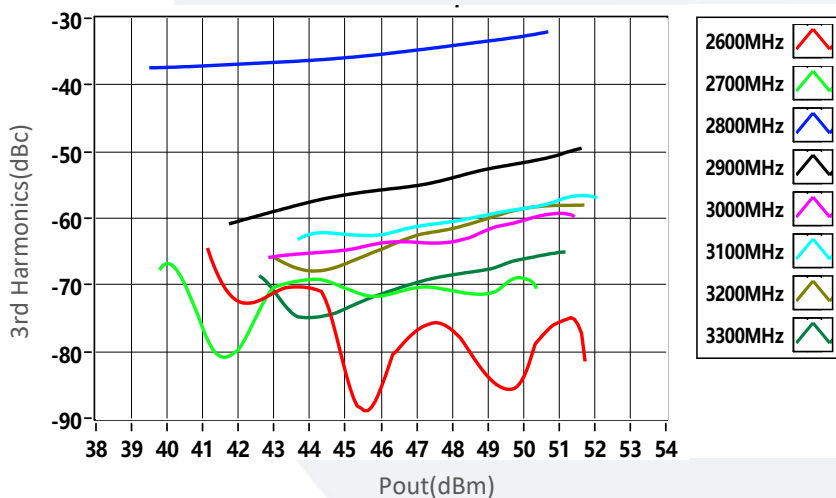
PAE vs Frequency



2nd Harmonics vs Output Power



3rd Harmonics vs Output Power



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