

## Power Amplifier

3.3-3.9GHz/50dB Gain/50dBm Psat

Model: TLPA3.3G3.9G-50-50

TLPA3.3G3.9G-50-50 is a power amplifier with a minimum small signal gain of 50 dB and a nominal Psat of 50 dBm across the frequency range of 3.3 to 3.9 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: 3.3-3.9GHz
- Gain: 53dB Min
- Output Power Psat: 50dBm Typ
- 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	3.3		3.9	GHz
小信号增益 Small Signal Gain	50	53		dB
增益平坦度 Gain Flatness		±1	±2	dB
线性输出功率 Output P1dB	48	49		dBm
饱和输出功率 Output Psat	49	50		dBm
三阶互调 Output IM3@Two tones, +40 dBm/tone, 1 MHz spacing.		-20		dBc
噪声系数 Noise Figure		9.5	13	dB
输入驻波 Input VSWR		1.5	2.5	:1
输出驻波 Output VSWR		1.5	2.5	: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	DB9	
尺寸 Size	200*130*24	mm

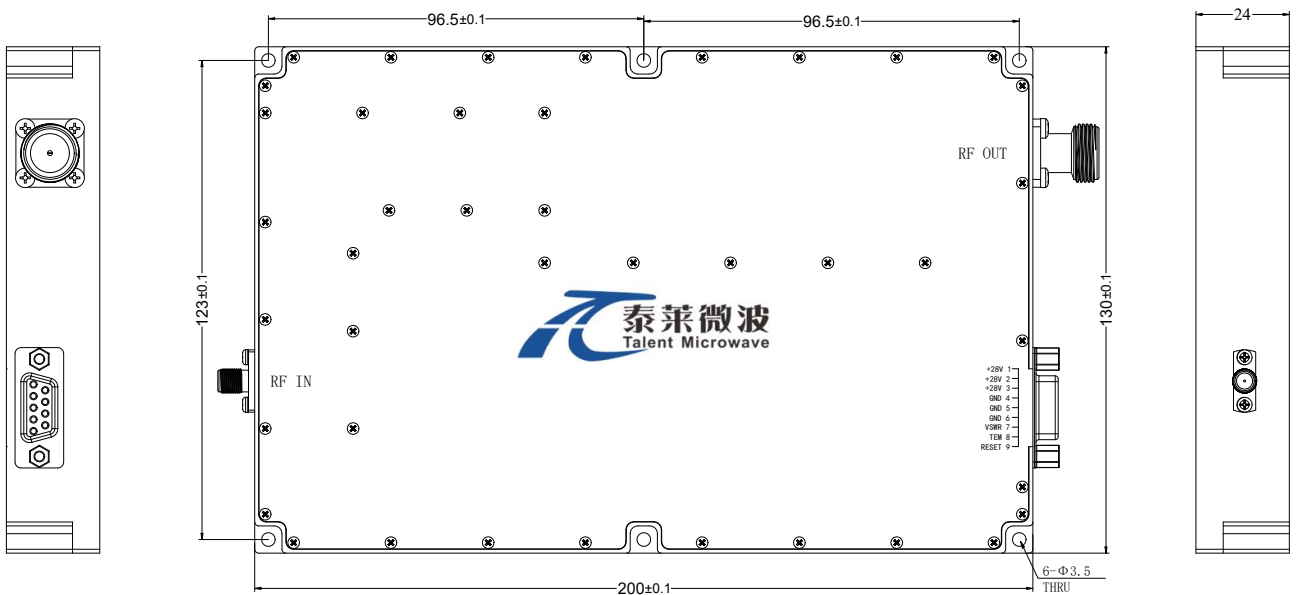
## 绝对最大值 Absolute Maximum Ratings:

参数 Parameter	指标 Value
供电偏置电压 Supply Bias Voltage	+28 V
输入功率 RF Input Power	+7 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.

### 直流供电 DC Supply(D-SUB,9Pin,Female):

引脚 Pin	名称 Name	功能 Function
1	+28V	+26-30VDC
2	+28V	+26-30VDC
3	+28V	+26-30VDC
4	GND	Ground
5	GND	Ground
6	GND	Ground
7	VSWR	VSWR FAULT:(TTL High= Fault, TTL Low =Normal)
8	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	RESET	Resets PA when logic LOW is applied and released (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)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
冲击 Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

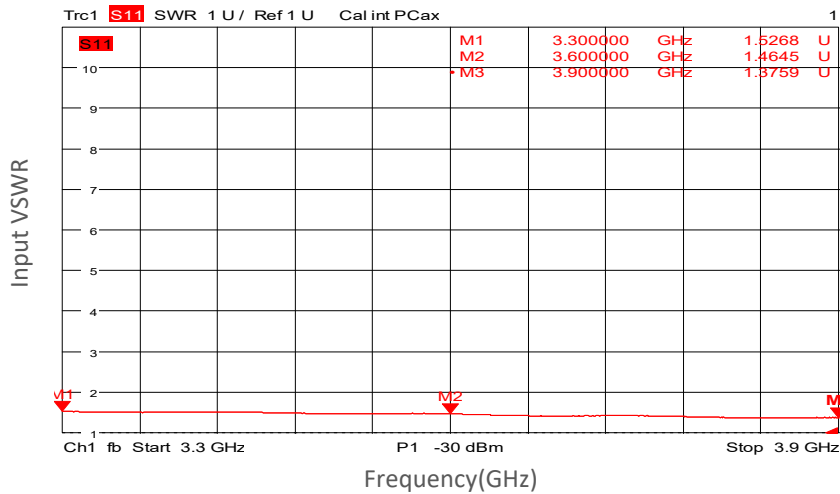
\*Note: For a wider temperature range, please consult the manufacturer.

### 订货信息 Ordering Information:

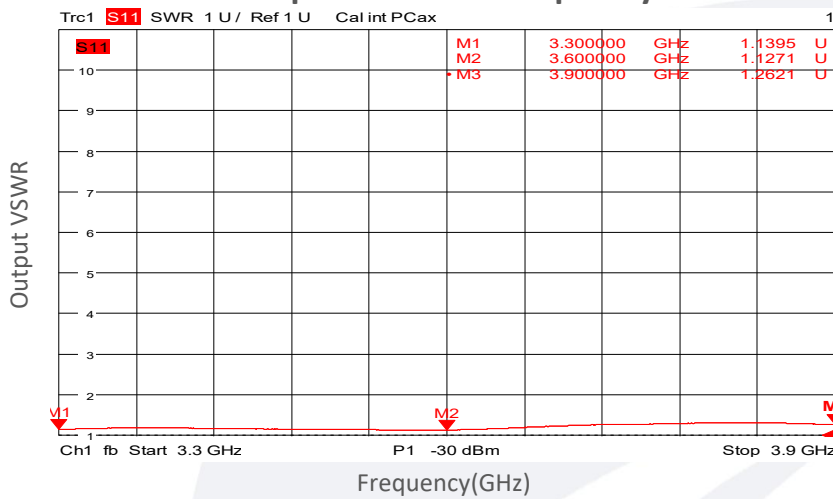
标准型号 Base Number	描述 Description	版本号 Revision
TLPA3.3G3.9G-50-50	Power amplifier 3.3-3.9GHz, Gain:50dB,Psat:50dBm,+28V DC,Without Heatsink	Rev.1.1
TLPA3.3G3.9G-50-50-HS	Power amplifier 3.3-3.9GHz, Gain:50dB,Psat:50dBm,+28V DC,With Heatsink	Rev.1.1

## 典型曲线 Typical Performance Data:

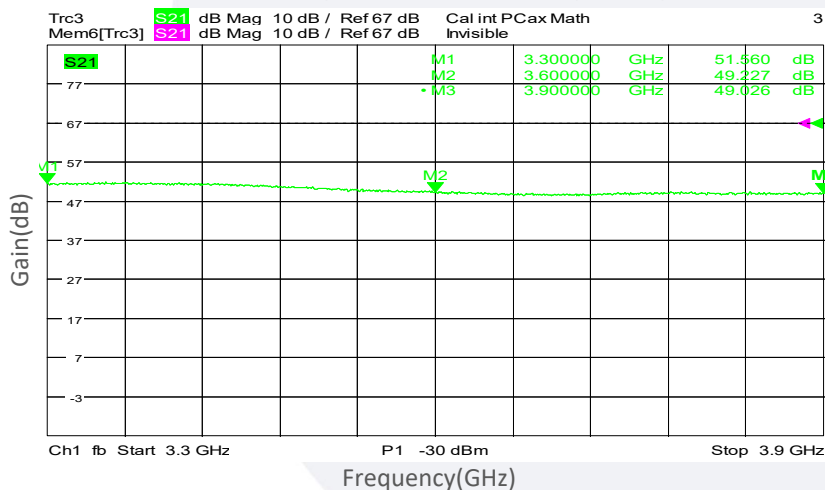
### Input VSWR vs Frequency



### Output VSWR vs Frequency



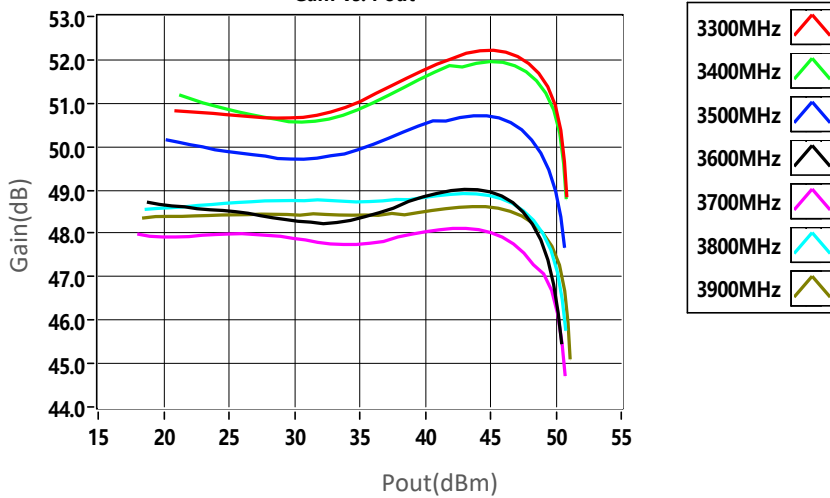
### Small Signal Gain vs Frequency



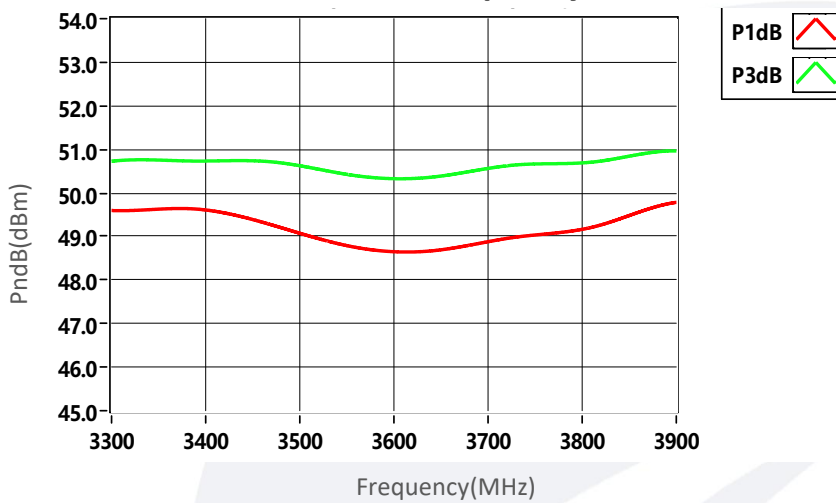
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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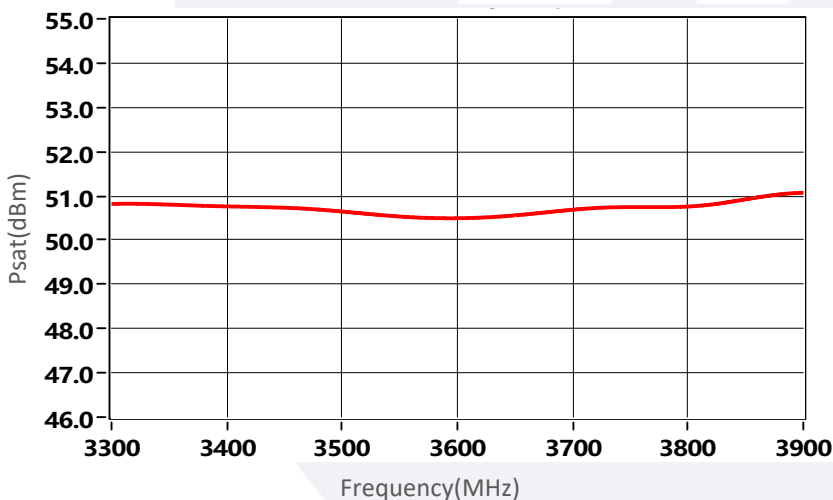
Gain vs Output Power



PndB vs Frequency



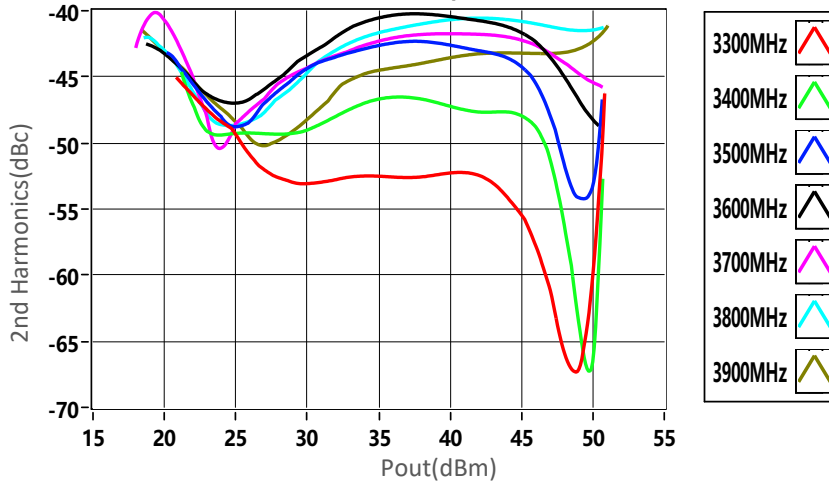
Psat vs Frequency



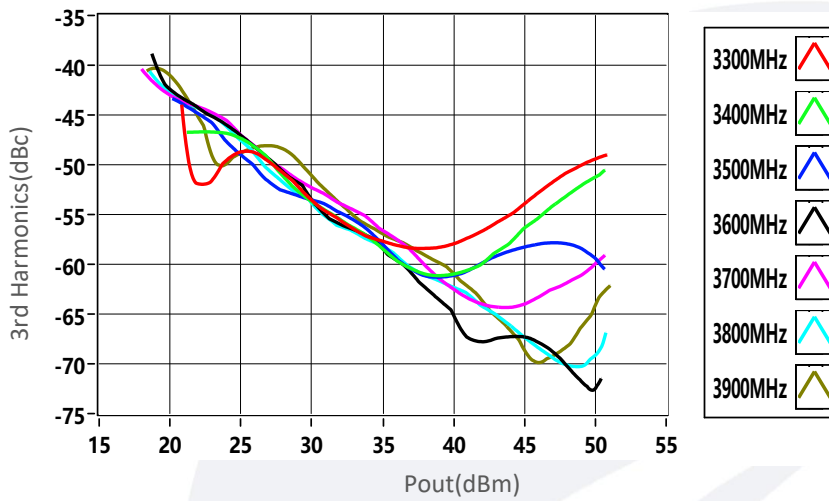
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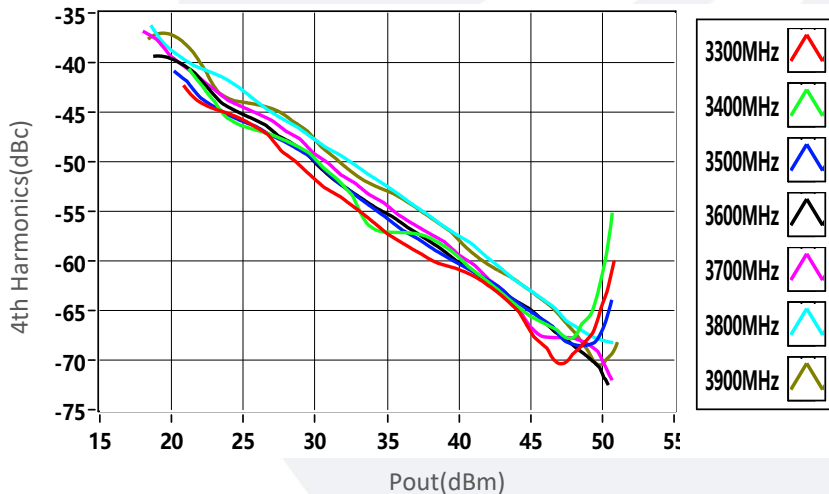
**2nd Harmonics vs Output Power**



**3rd Harmonics vs Output Power**



**4th Harmonics vs Output Power**



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