

Power Amplifier

0.1-20MHz/45dB Gain/45dBm Psat

Model: TLPA0.1M20M-45-45

TLPA0.1M20M-45-45 is a power amplifier with a minimum small signal gain of 45 dB and a minimum Psat of 45 dBm across the frequency range of 0.1 to 20 MHz. The DC power requirement for the amplifier is +28 VDC/3.5 A. The input and output port configuration offers coax adapter structure with SMA female.

Features:

- Frequency range: 0.1-20MHz
- Gain: 45dB Min
- Output Power Psat: 45dBm 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	0.1		20	MHz
小信号增益 Small Signal Gain	45	47		dB
增益平坦度 Gain Flatness		±1	±2	dB
线性输出功率 Output P1dB		42		dBm
饱和输出功率 Output Psat	45	45.5		dBm
输入驻波 Input VSWR		1.5	2.0	:1
直流电压 DC Voltage		28	30	V DC
静态电流 Static Current		2.5		A
饱和电流 Saturation Current		3.5	4	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/SMA Female	
直流供电接口 DC Power Supply Connector	D-SUB-9	
尺寸 Size	154*94*20(Without Heatsink) 264*140*82(With Heatsink)	mm
重量 Weight	500	g

绝对最大值 Absolute Maximum Ratings:

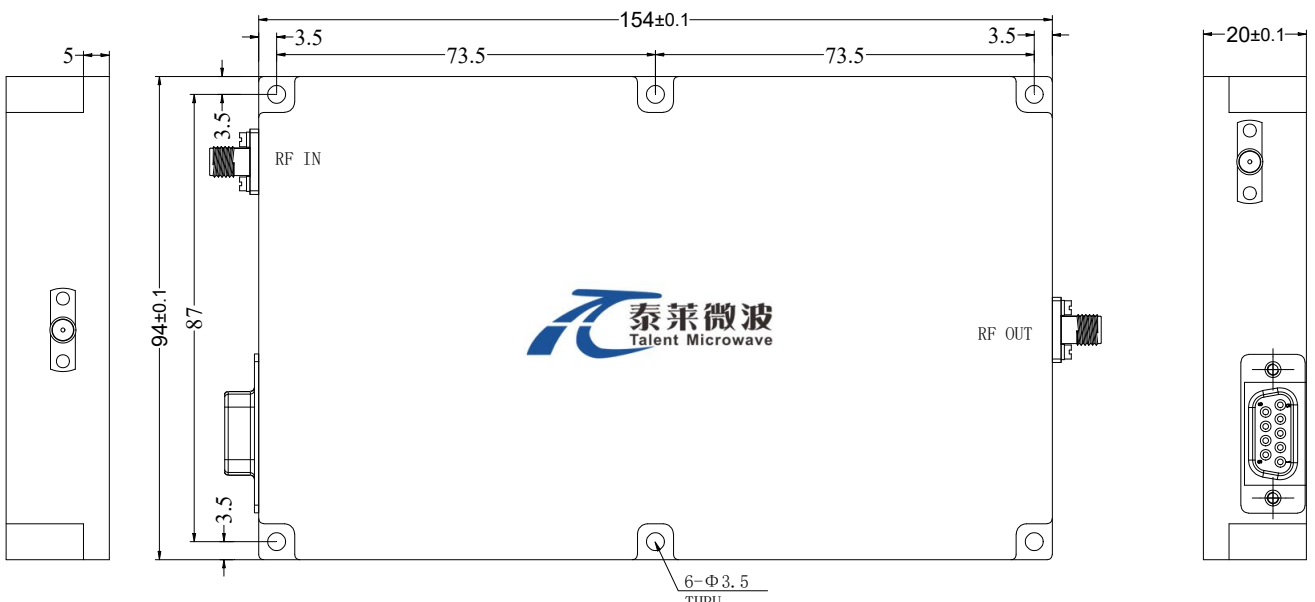
参数 Parameter	指标 Value
供电偏置电压 Supply Bias Voltage	+30 V
输入功率 RF Input Power	+5 dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V



Simple 220V System
Available SAC option

外形图 Outline Drawing:

Unit:mm; Tolerance:±0.1mm



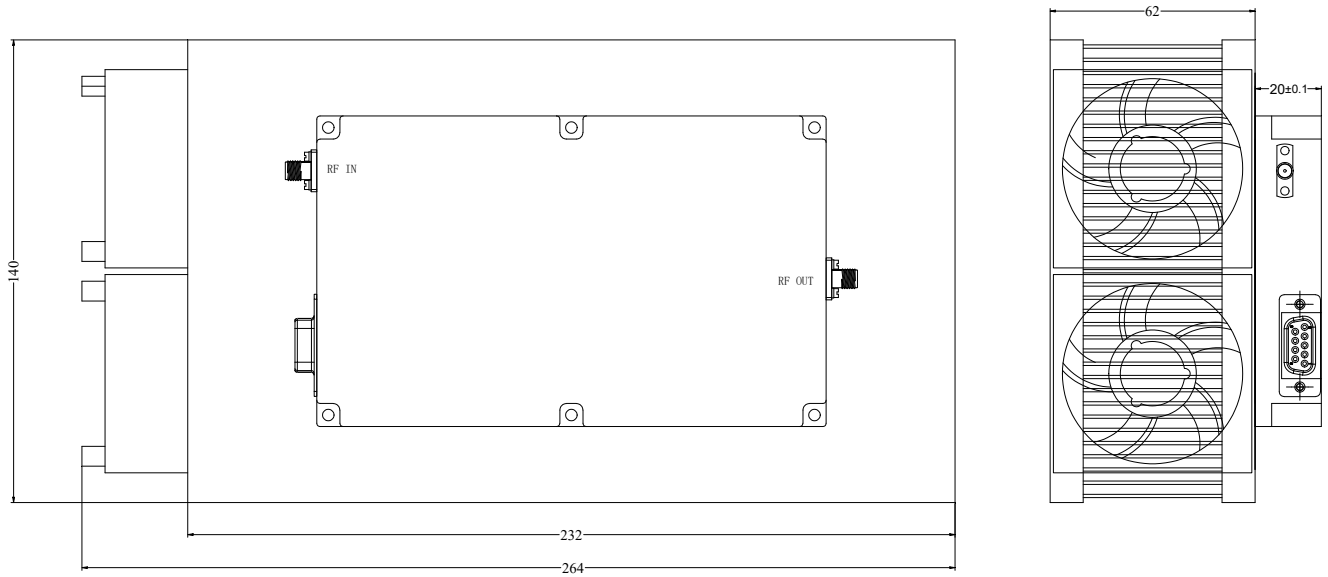
*****Heat Sink Required During Operation**



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

外形图 Outline Drawing:

Unit:mm; Tolerance:±0.1mm



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

引脚 Pin	名称 Name	功能 Function
1~3	VCC	电源正极,+26.0-30.0VDC
4~5	GND	地
6	NC	悬空
7	Over Temperature	当外壳温度超过85℃时, 功率放大器关闭, 此引脚高拉。如果机箱温度降至80℃, 功率放大器将恢复正常工作, 此引脚将拉低。
8	NC	悬空
9	EN	放大器使能: TTL高(5V)(内拉高) 放大器禁用: 接地

使用说明 Instruction Manual:

开机 Power on	
1	将射频输入口连接到信号源，信号此时应为关闭状态。
2	将射频输出口连接到负载(负载驻波小于3:1)。
3	将28V供电接入DB9连接器（红线正，黑线负）， 将28V供电接入风扇（红线正，黑线负）
4	给功放和风扇上电，供电不要超过30V，输出端不可开路或短路。
5	打开射频信号，注意输入信号不要超过+5dBm.

关机 Power off	
1	关闭射频信号。
2	给功放和风扇断电。
3	移除射频输出端负载。
4	移除输入端信号源。

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature*	-40		+50	°C
存储温度 Non-operating Temperature*	-50		+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			

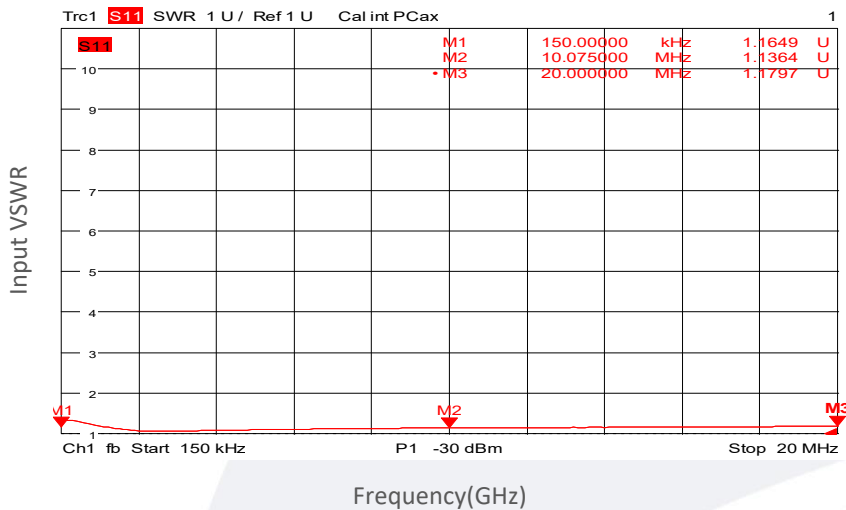
*Note: For a wider temperature range, please consult the manufacturer.

订货信息 Ordering Information:

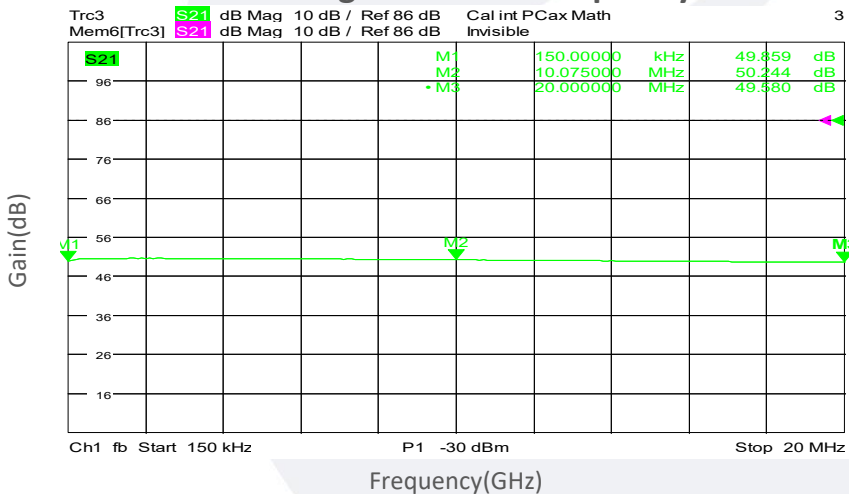
标准型号 Base Number	描述 Description	版本号 Revision
TLPA0.1M20M-45-45	Power amplifier 0.1-20MHz, Gain:45dB, Psat:45dBm, +28V DC, Without Heatsink	Rev.1.0
TLPA0.1M20M-45-45-HS	Power amplifier 0.1-20MHz, Gain:45dB, Psat:45dBm, +28V DC, With Heatsink	Rev.1.0

典型曲线 Typical Performance Data:

Input VSWR vs Frequency



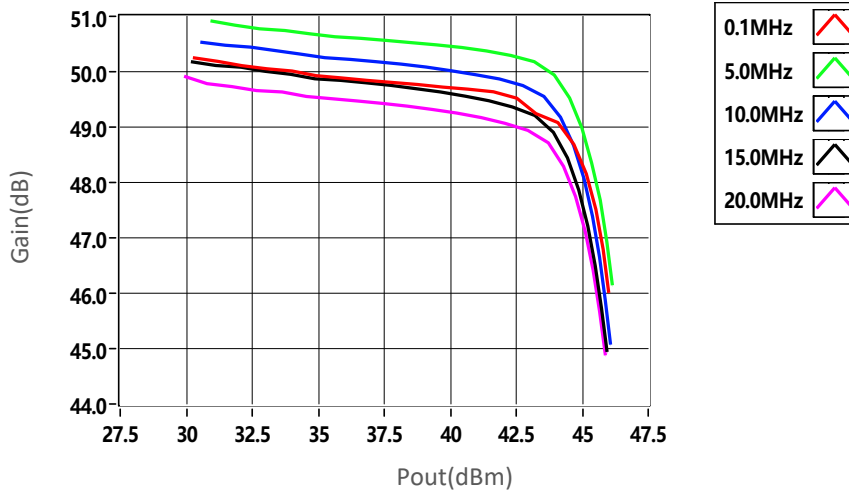
Small Signal Gain vs Frequency



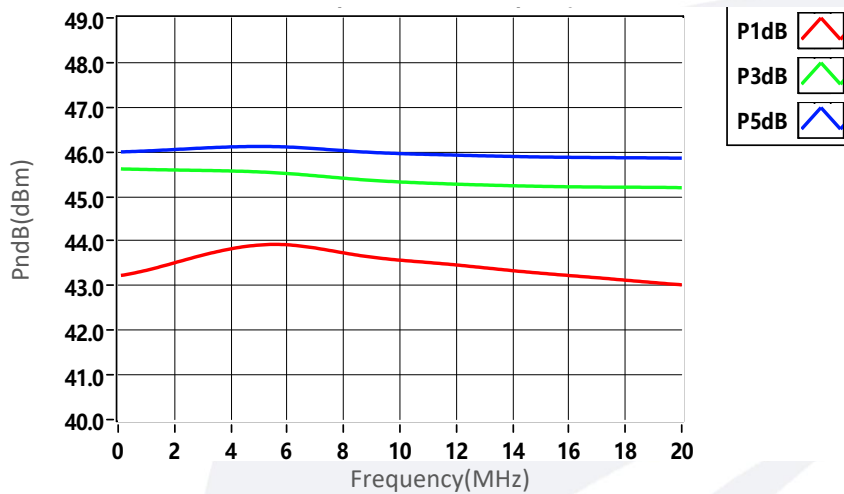
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

典型曲线 Typical Performance Data:

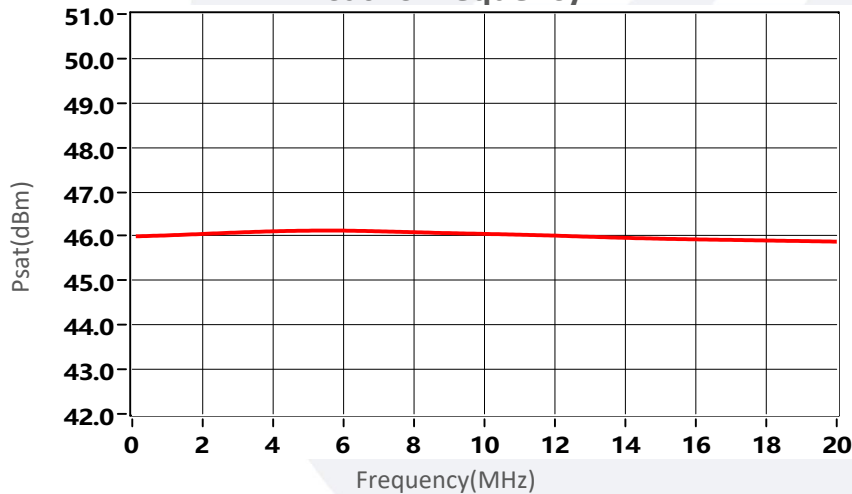
Gain vs Output Power



PndB vs Frequency



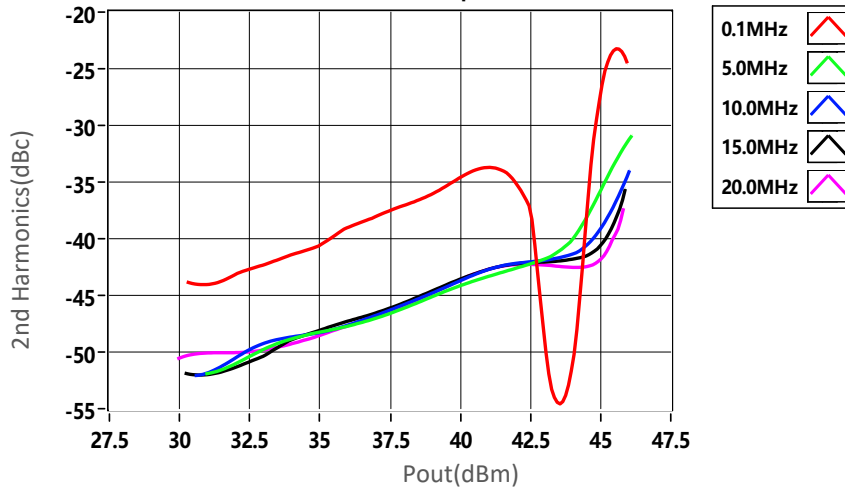
Psat vs Frequency



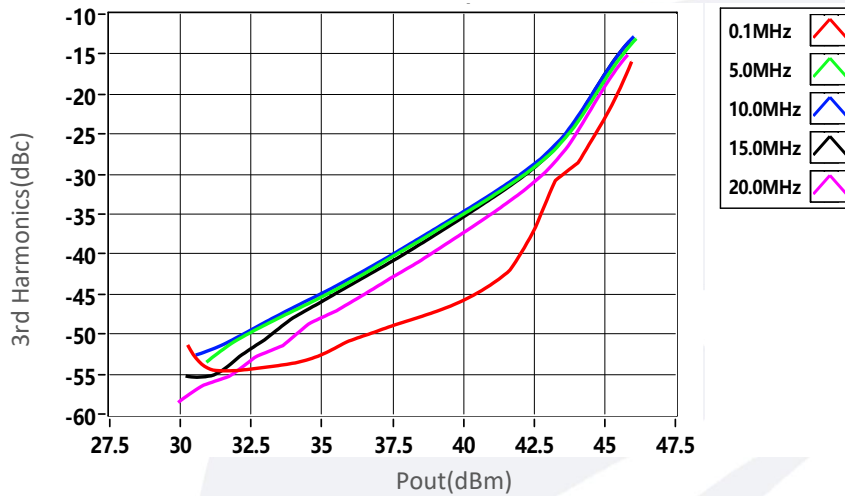
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典型曲线 Typical Performance Data:

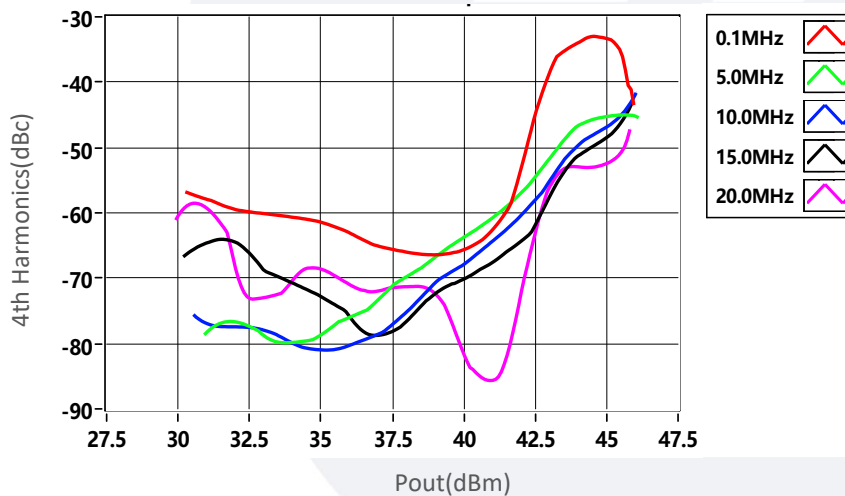
2nd Harmonics vs Output Power



3rd Harmonics vs Output Power



4th Harmonics vs Output Power



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