泰莱微波
Talent Microwave

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Low Noise Amplifier

0.01-18GHz/3.0dB NF/30dB Gain/21dBm P1dBm
18-40GHz/5.5dB NF/29dB Gain/19dBm P1dBm

Model: TLLA10M40G-30-30

TLLA10M40G-30-30 is a low noise amplifier with a typical small signal gain of 30 dB and a nominal noise figure of 3.0 dB across the frequency range of 0.01 to 18 GHz. And offers a typical small signal gain of 29 dB and a nominal noise figure of 5.5 dB across the frequency range of 18 to 40 GHz. The DC power requirement for the amplifier is +12 V DC/350 mA. The input and output port configuration offers coax adapter structure with 2.92mm female.

Features:

- Frequency range: 0.01-40GHz
- Gain: 30dB Typ@Band A; 29dB Ty@Band B
- Noise Figure: 3.0dB Typ@Band A; 5.5dB Typ@Band B
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

Applications:

- Communication systems

电气特性 Electrical Characteristics:

参数 Parameter		Min	Typ	Max	单位 Units
频率范围 Frequency range		Band A:0.01-18; Band B:18-40			GHz
小信号增益 Small Signal Gain	@0.01-18GHz	25	30		dB
	@18-40GHz	24	29		
增益平坦度 Gain Flatness	@0.01-18GHz		±3		dB
	@18-40GHz		±2.5		
噪声系数 Noise Figure	@0.01-18GHz		3		dB
	@18-40GHz		5.5		
线性输出功率 Output P1dB	@0.01-18GHz	18	21		dBm
	@18-40GHz	16	19		
饱和输出功率 Output Psat	@0.01-18GHz		23		dBm
	@18-40GHz		21		
输出三阶交调 Output IP3	@0.01-18GHz		31		dBm
	@18-40GHz		28		

*Performance may degrade below 300 MHz. Please refer to below typical test plots

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电气特性 Electrical Characteristics:

参数 Parameter		Min	Typ	Max	单位 Units
输入驻波 Input VSWR	@0.01-18GHz		1.8		:1
	@18-40GHz		2		
输出驻波 Output VSWR	@0.01-18GHz		1.8		:1
	@18-40GHz		2		
直流电压 DC Voltage			+12		V DC
直流电流 DC Supply Current			350	400	mA
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	2.92mm Female/2.92mm Female	
直流偏置 DC Bias	Solder Pin	
尺寸 Size	30*48*12(Without Heatsink) 30*92*27(With Heatsink)	mm
重量 Weight	40	g

绝对最大值 Absolute Maximum Ratings:

参数 Parameter	指标 Value
供电偏置电压 Supply Bias Voltage	+15 V
输入功率 RF Input Power	+2 dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V

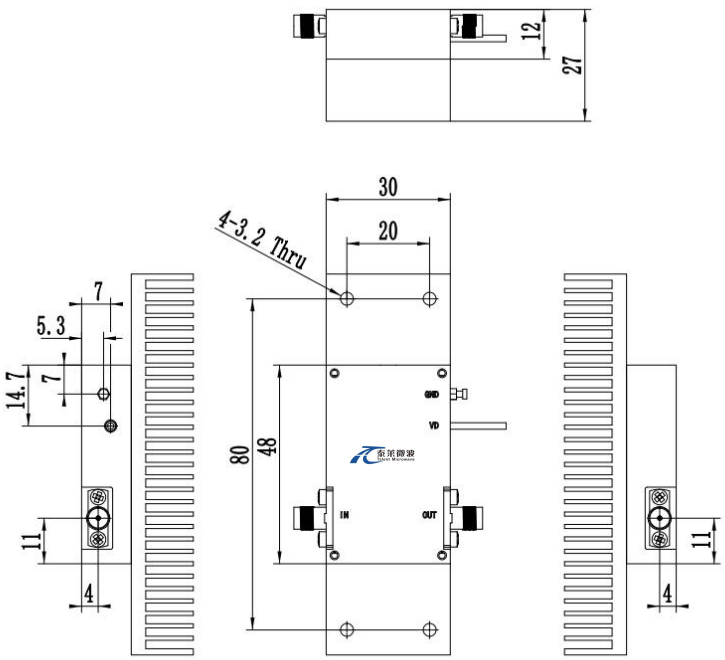


Simple 220V System
Available SAC option

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外形图 Outline Drawing:

Unit:mm; Tolerance:±0.1mm



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

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	-45		+85	℃
存储温度 Non-operating Temperature	-55		+125	℃
相对湿度 Relative humidity		95		%
海拔 Altitude	50,000			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			

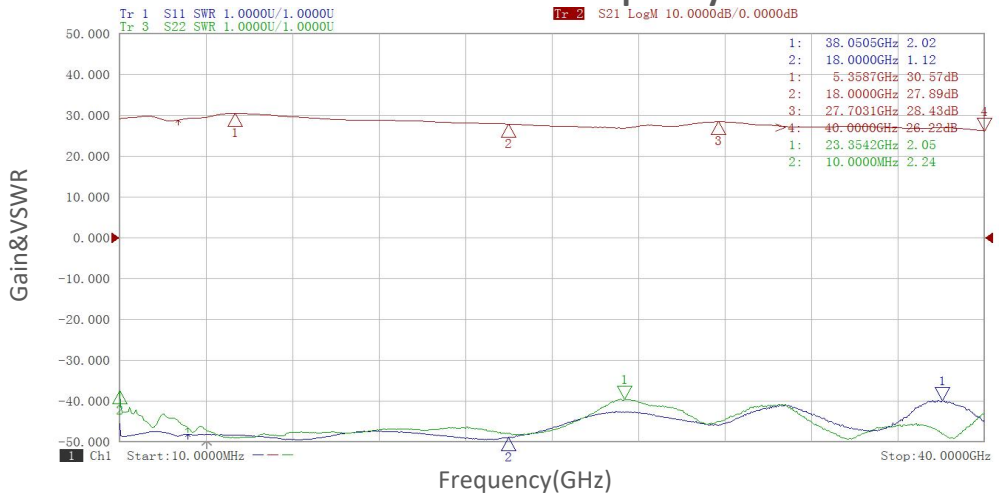
订货信息 Ordering Information:

标准型号 Base Number	描述 Description	版本号 Revision
TLLA10M40G-30-30	Low Noise Amplifier, Band A: Noise Figure:3.0dB, Gain:30 dB,P1dB:21dBm,18-40GHz, Noise Figure:5.5dB, Gain:29 dB,P1dB:19dBm; +12V DC,Without Heatsink	Rev.1.1
TLLA10M40G-30-30-HS	Low Noise Amplifier, Band A: Noise Figure:3.0dB, Gain:30 dB,P1dB:21dBm,18-40GHz, Noise Figure:5.5dB, Gain:29 dB,P1dB:19dBm; +12V DC,With Heatsink	Rev.1.1

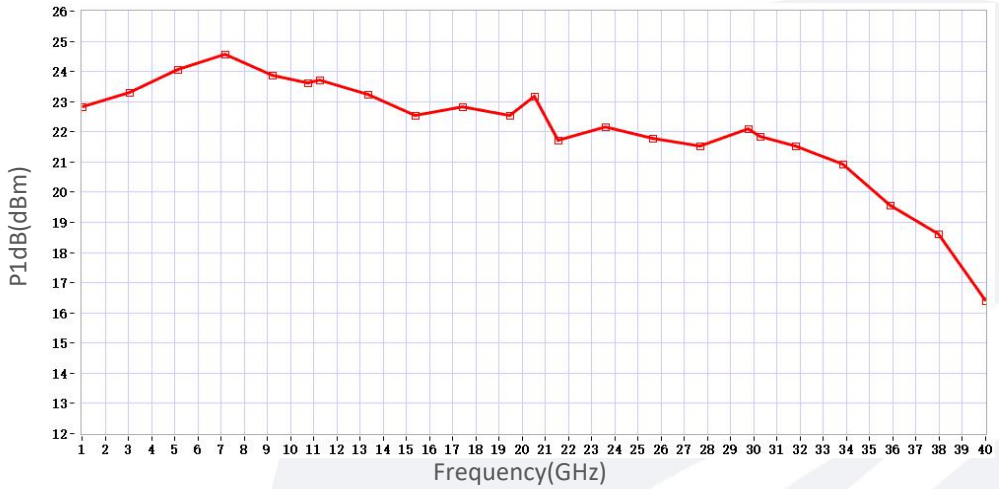
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典型曲线 Typical Performance Data:

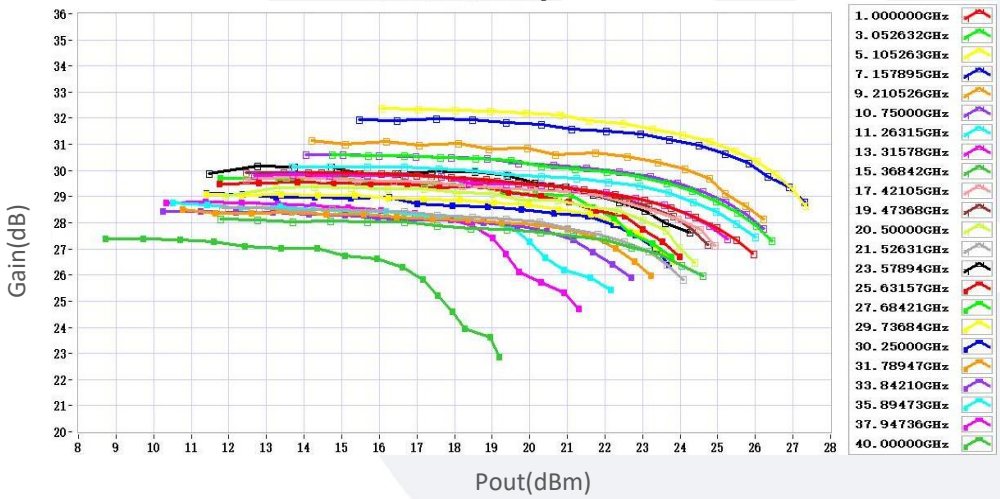
Gain&VSWR vs Frequency



P1dB 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.