

Solid State High Power Amplifier Systems

13.5-14.5GHz/60dB Gain/60dBm Psat/380V AC

Model: TLPA13.5G14.5G-60-60-BC

TLPA13.5G14.5G-60-60-BC is a solid state high power amplifier systems provides high output power and high gain across the 13.5 to 14.5 GHz frequency range. The amplifier features a built-in 380V power supply, making it easy to use in most lab environments. This model features thermal self protection, preventing damage to the amplifier and providing added reliability.

Features:

- Wide Band:13.5-14.5 GHz
- Gain: 60 dB Min
- Psat Output Power:60 dBm Min
- Protection:Over TEM,input overdrive,over voltage, under voltage ,load VSWR protection
- 50 Ohm Matched Input / Output

电气特性 Electrical Characteristics:

参数 Parameter	代码 Symbol	Min	Typ	Max	单位 Units
频率范围 Frequency range	BW	13.5-14.5			GHz
线性增益平坦度 Linear Gain flatness	Δ GL		$\pm 0.3@40\text{MHz}$ $\pm 2@full\ band$		dB
功率增益 Power Gain	Gp	60			dB
增益调节范围 Gain adjust Range	Δ GR	20			dB
增益调节步进 Gain adjust Step	Δ GS		0.5		dB
饱和输出功率 Output Psat	Psat	60			dBm
杂散 Spurious@Pout=60dBm	Spur			-60	dBc
谐波 Harmonics@Pout=60dBm	HAM			-30	dBc
增益稳定度 Gain stability@24h	Gstb			± 0.25	dB
双音互调 Two-tone intermodulation (5MHz space)	IMD	-25 dBc max at total output power 56dBm			dBc
输入驻波 Input VSWR	VSWRin			1.5	:1
输出驻波 Output VSWR	VSWRout		1.5	2	:1
交流电压 AC Voltage @3-phase (50-60Hz)	Vac		380	420	V AC
功耗 Power Consumption@Pout=60dBm	Pdiss			8	kW
功耗 Power Consumption@Psat	Pdiss			9	kW
阻抗 Impedance	I/O-IMP	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	N Female WR62	
正向/反向耦合 Forward/Reverse Coupling	N Female/N Female	
通信接口 Communication Connector	Serial:RS422;Ethernet: RJ-45	
液晶显示屏 Front Panel LCD Screen Display	7 inch LCD Screen Display	
交流供电接口 AC Power Connector	Y50DX-3205	
尺寸 Size	20U*580 depth	mm
重量 Weight	≤300	Kg

绝对最大值 Absolute Maximum Ratings:

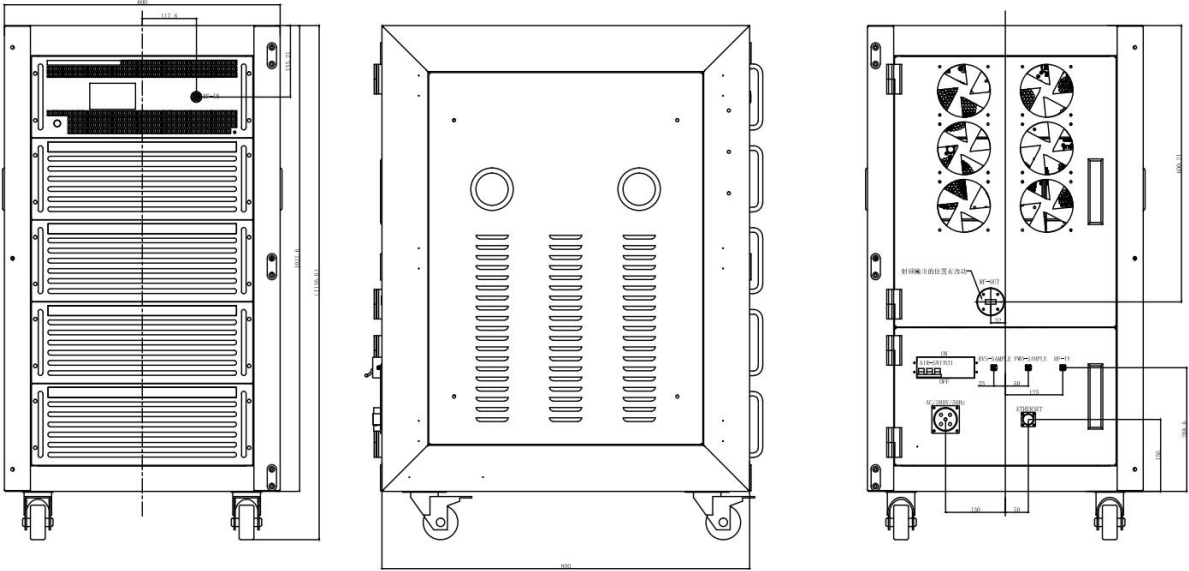
参数 Parameter	指标 Value
输入功率 RF Input Power	+5 dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V

主要功能 Key Features:

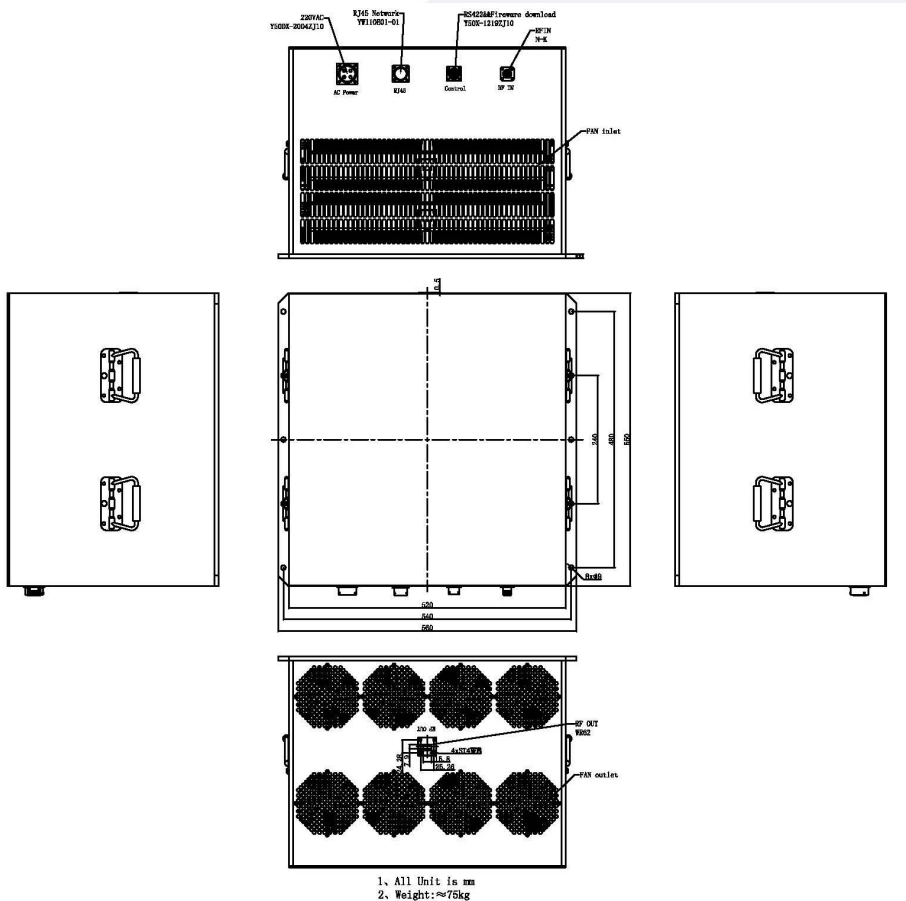
参数 Parameter	特点 Advantages
控制功能 Control functions	1, Power setting On/Off
内置保护功能 Protection functions	1, Over TEM: $\geq +55^{\circ}\text{C}$ shutdown 2, Over DC voltage: $\geq 29\text{V}$ shutdown 3, Under DC voltage: $\leq 20\text{V}$ shutdown 4, Input overdrive: $\geq 10\text{dBm}$ shutdown 5, Load VSWR protection: The unit disables RF when reverse power exceeds the safe level of 3:1 VSWR or reduces power by 6dB
监控功能 Monitoring function	1, Input voltage 2, Input current 3, Input power (rf) 4, output VSWR 5, output power 6, reverse power 7, status of gate voltages 8, temp
监控和控制 Remote control	RS422/LAN
冷却系统 Cooling system	Built in Cooling system, forced air cooling

外形图 Outline Drawing:

Unit:mm



Vesion 1



Vesion 2 (designing, current outline is not correct)

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*	-40		+70	°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
TLPA13.5G14.5G-60-60-BC	Solid State High Power Amplifier Systems 13.5-14.5GHz, Gain:60dB, Psat:60 dBm, 380V AC, Built in Fan Cooling	Rev.1.2