

Power Amplifier

8-12GHz/50dB Gain/50dBm Psat

Model: TLPA8G12G-50-50-IP67

TLPA8G12G-50-50-IP67 is a power amplifier with power gain of 50 dB and a nominal Psat of 50 dBm across the frequency range of 8 to 12 GHz. The DC power requirement for the amplifier is +28 VDC/650 W. 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: 8-12 GHz
- Gain: 50dB Min
- Output Power Psat: 50dBm Min
- Protection: Over TEM, over current, over voltage, load VSWR protection
- 50 Ohm Matched Input / Output

Applications:

- Cellular
- PCN
- GSM
- ISM
- Lab Test

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	8		12	GHz
Linear Gain adjustment range	30			dB
Linear Gain adjustment step		0.5		dB
Power Gain@Pout=50dBm	50			dB
Power Gain Flatness		±4.5		dB
Output P1dB	45			dBm
Output Psat	50			dBm
Output Psat Flatness		±1.5		dB
Spurious@Pout=50dBm			-60	dBc
Harmonics@Pout=50dBm			-25	dBc
Input VSWR			1.5	:1
Output VSWR			2	:1
Load VSWR			5	:1

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
DC Voltage		28	29	V DC
Power Consumption@Pout=50dBm		600		W
Power Consumption@Psat			650	W
Ingress Protection Grade	IP-67(Power off)			
Impedance	50			Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/N Female	
DC Supply Connector	Y50DX-1404	Pin1~2:+28V Pin3~4:GND
M&C Connector	Ethernet:RJ-45;Serial:Y50X-1007	
Size	280*180*120	mm
Weight	≤7	Kg

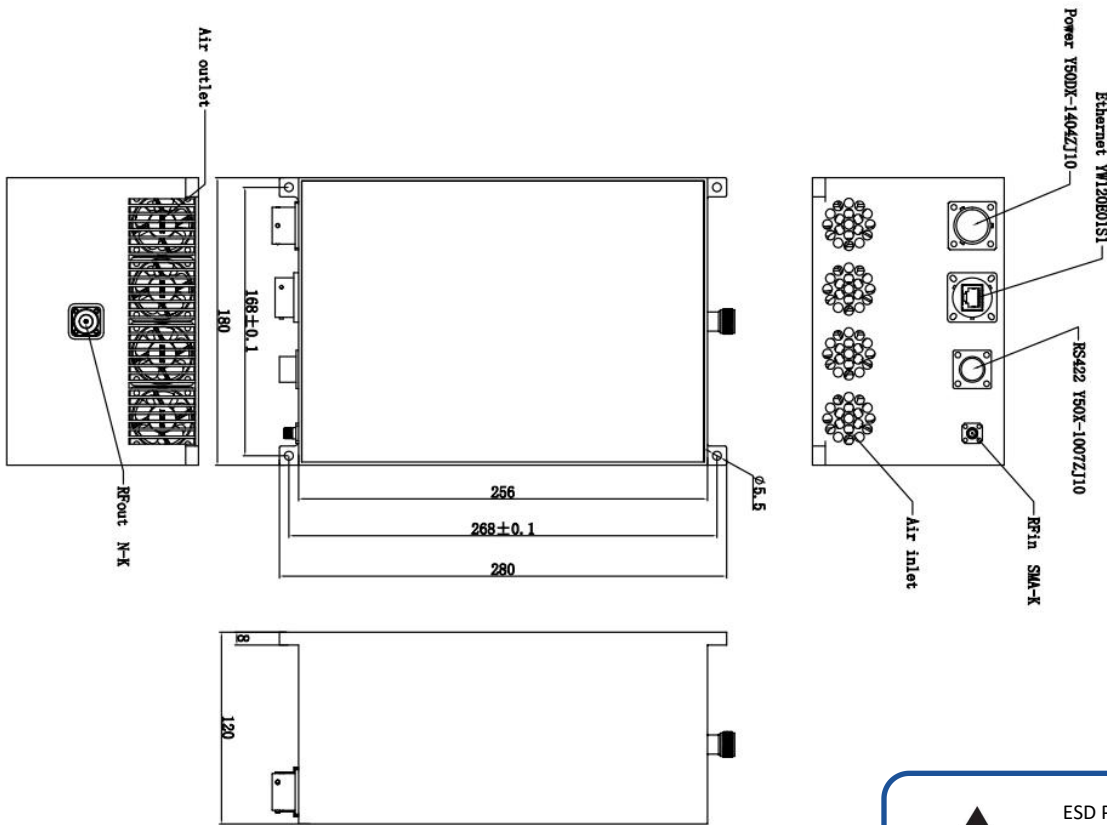

Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+29 V
RF Input Power	+5 dBm
ESD sensitivity (HBm)	Class 0, passed 150V



Outline Drawing:

Unit:mm

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

Key Features:

Parameter	Advantages
Protection functions	1, Over TEM: environment temperature $\geq +70^{\circ}\text{C}$ shutdown; case temperature $\geq +95^{\circ}\text{C}$ shutdown 2, Over DC voltage: $\geq 29.5\text{V}$ shutdown 3, Over current: $\geq 120\%$ rated current shutdown 4, Load VSWR protection: The unit disables RF when reverse power exceeds the safe level of 3:1 VSWR or reduces power by 6dB
Communication function	RS422; DCP/UDP (choose one)
Monitor function	Chip-level: status of power chip (gate voltage, drain current, case-temp); System-level: output power, reverse power, load VSWR, DC voltage, DC current, environment temp.
Cooling system	Built in Cooling system, forced air cooling

Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature*	-20		+65	°C
Non-operating Temperature*	-40		+70	°C
Relative humidity		95		%
Altitude	3,000			meters
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

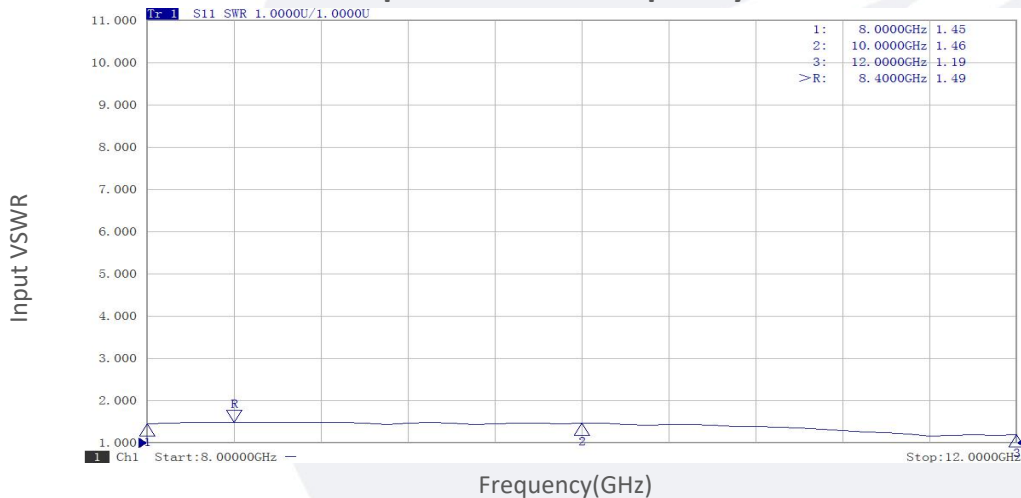
*Note: For a wider temperature range, please consult the manufacturer.

Ordering Information:

Base Number	Description	Revision
TLPA8G12G-50-50-IP67	Power amplifier 8-12GHz, Gain:50dB,Psat:50dBm,+28V DC,forced air cooling	Rev.1.1

Typical Performance Data:

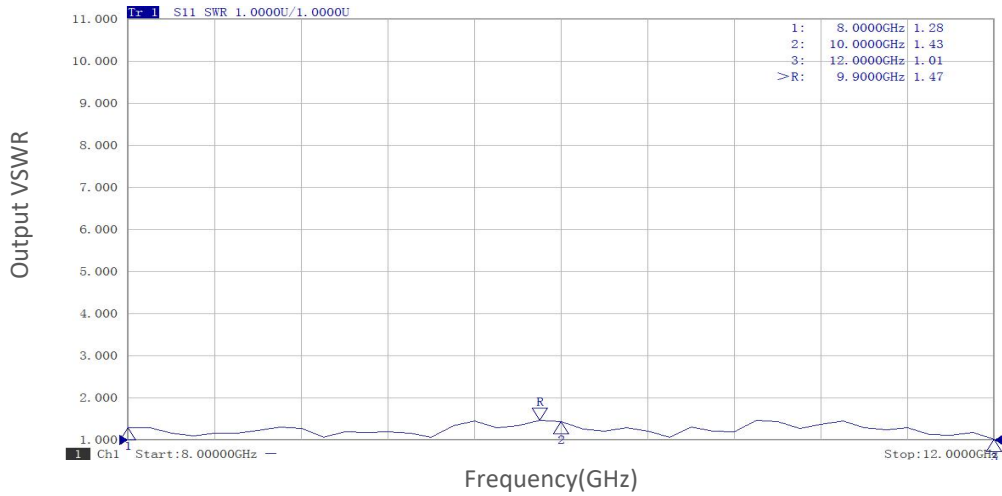
Input VSWR vs Frequency



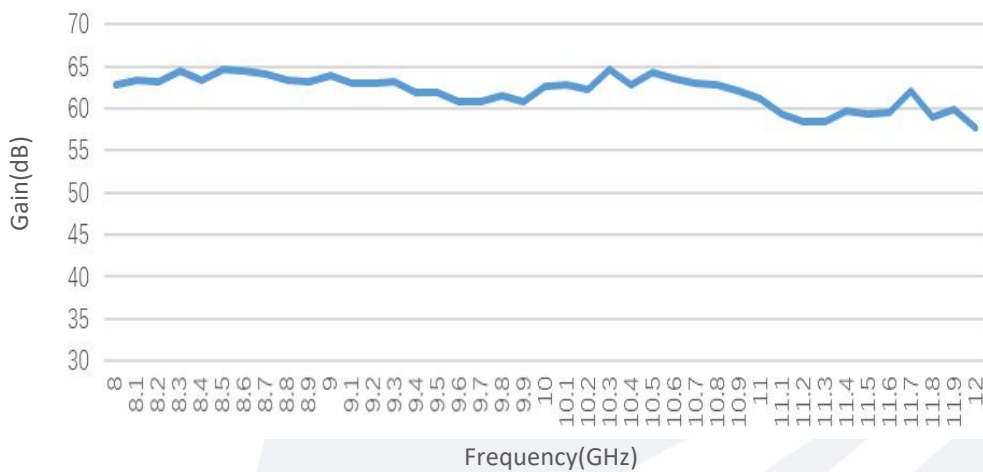
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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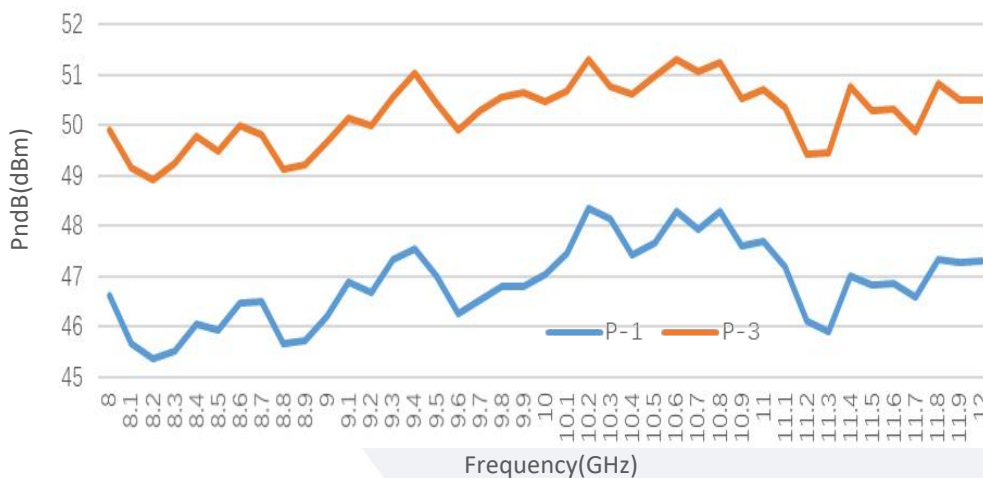
Output VSWR vs Frequency



Small Signal Gain vs Frequency



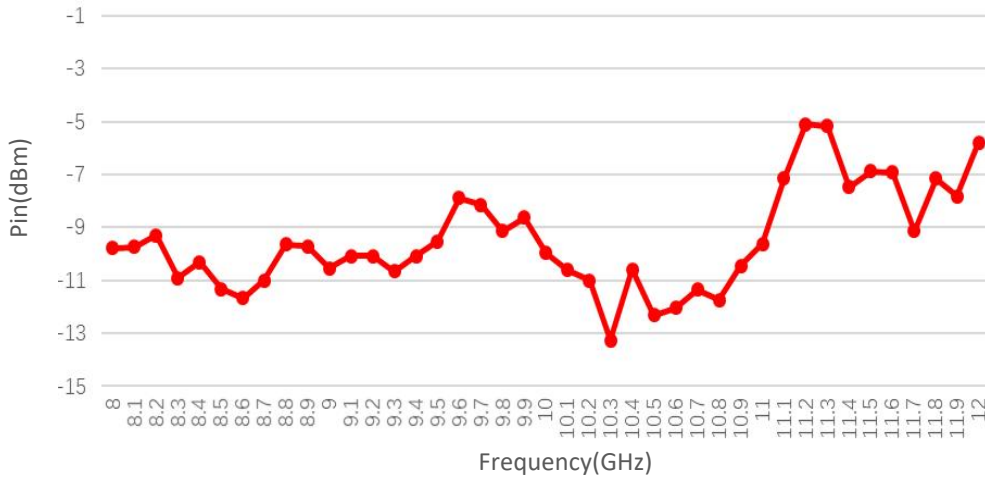
PndB vs Frequency



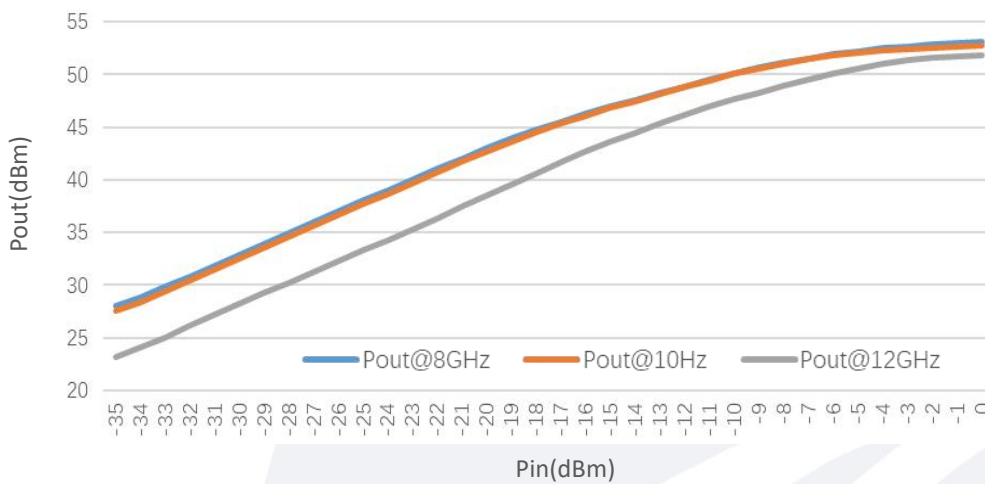
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Typical Performance Data:

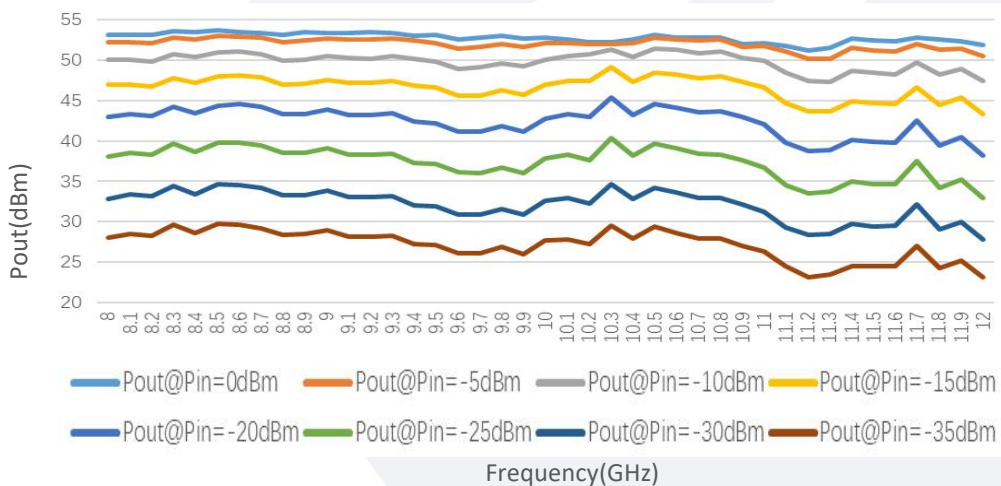
Pin@Pout=50dBm vs Frequency



Pout@Pin



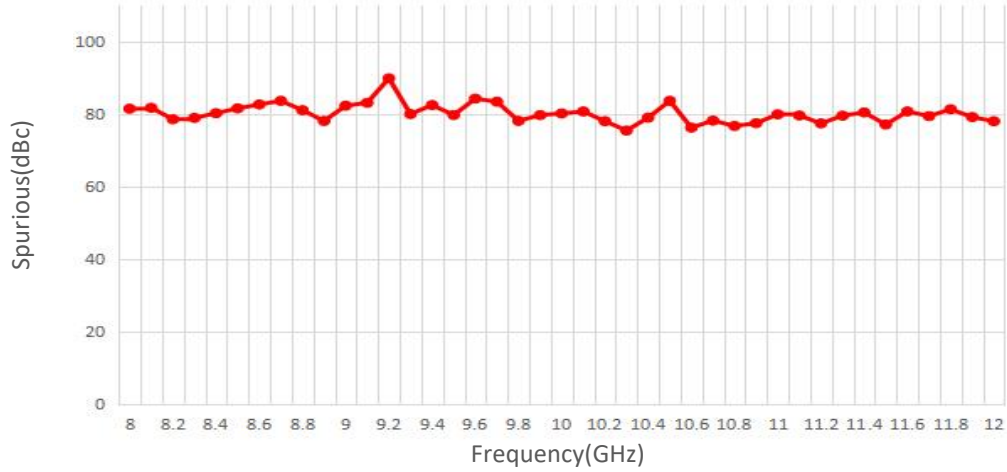
Pout@Equal_Pin



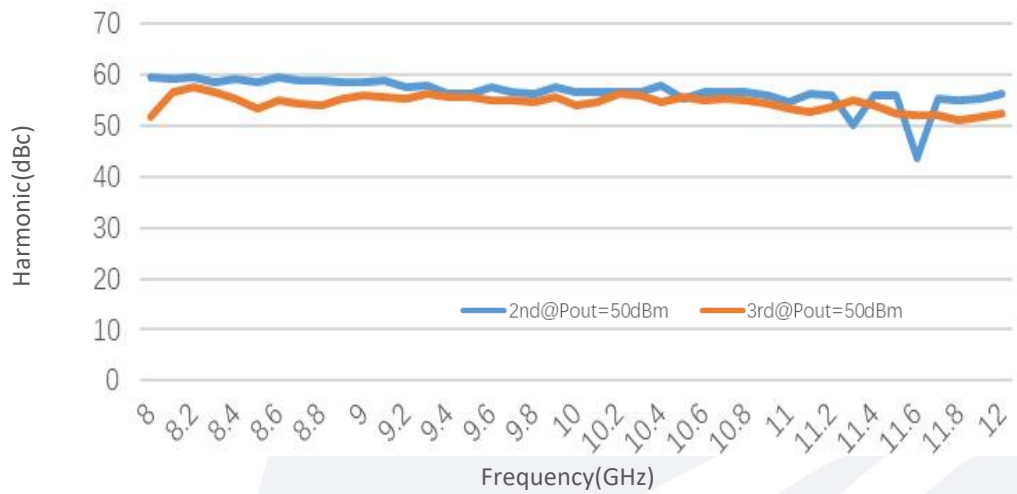
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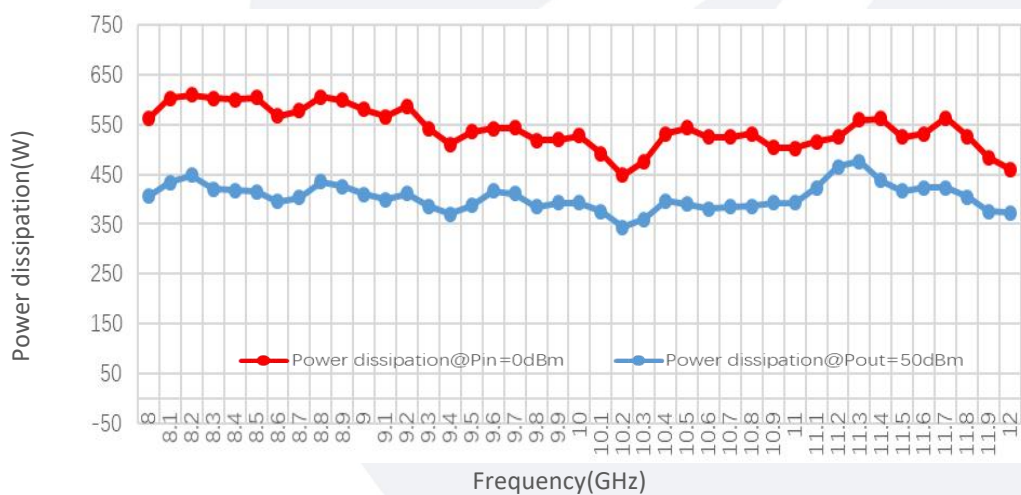
Spurious vs Frequency



Harmonic vs Frequency



Power dissipation vs Frequency



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