

## Low Noise Amplifier

50KHz-53GHz/5.0dB NF/12dB Gain/15dBm P1dB

Model: TLLA50K53G-12-50

TLLA50K53G-12-50 is a low noise amplifier with a typical small signal gain of 12 dB and a nominal noise figure of 5.0 dB across the frequency range of 50 KHz to 53 GHz. The DC power requirement for the amplifier is +8 V DC/160 mA. The input and output port configuration offers coax adapter structure with 2.4mm female.

### Features:

- Frequency range: 50KHz-53GHz
- Gain: 12dB Typ
- Noise Figure: 5.0dB Typ
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Communication systems

### Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	50KHz-53GHz			
Small Signal Gain		12		dB
Gain Flatness		±4.0		dB
Noise Figure*		5.0		dB
Output P1dB		15		dBm
Output IP3		20		dBm
Input VSWR		2		:1
Output VSWR*		2		:1
DC Voltage	+5	+8		V DC
DC Supply Current		160		mA
Impedance	50			Ohms

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

### Mechanical Specifications:

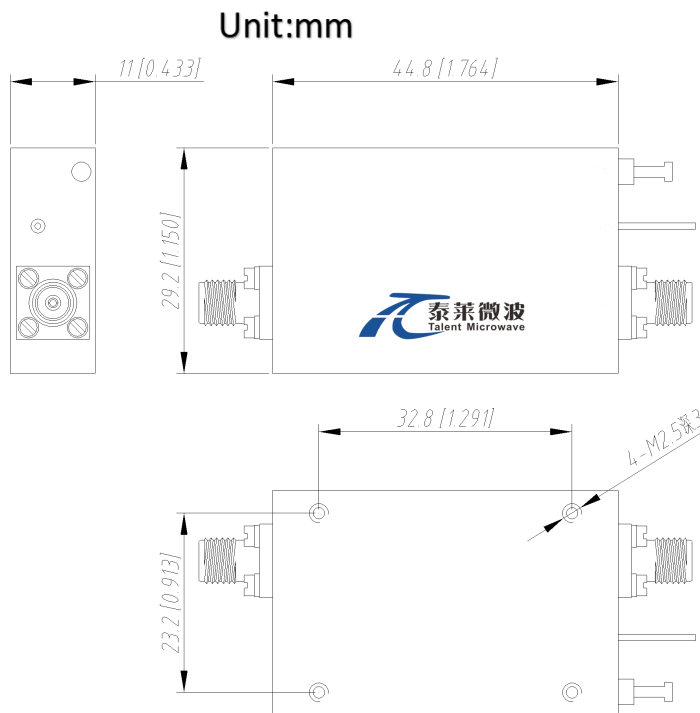
Parameter	Value	Units
Input /Output Connector	2.4mm Female/2.4mm Female	
DC Bias	Solder Pin	
Size	44.8*29.2*11	mm

### Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+12 V
RF Input Power	+10 dBm
ESD sensitivity (HBm)	Class 0, passed 150V



### Outline Drawing:



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



### Environmental Conditions:

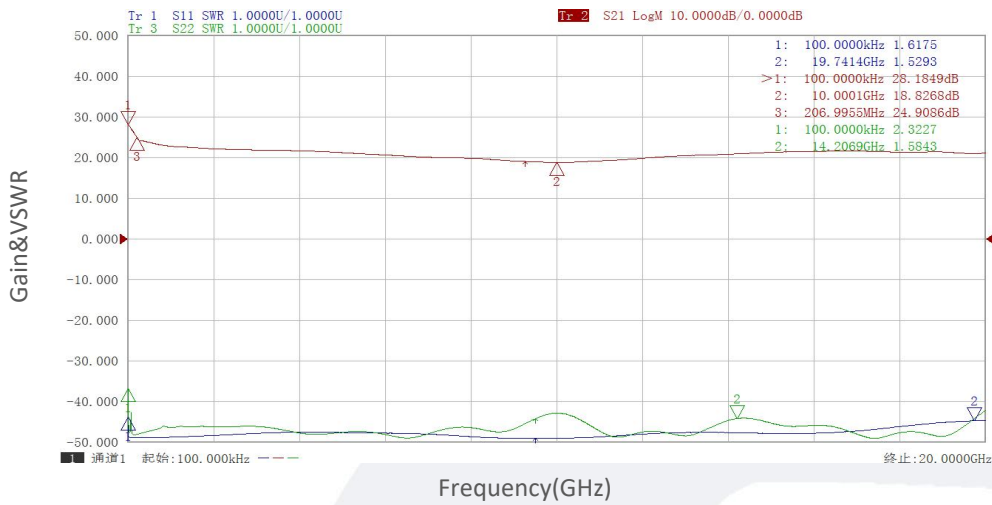
Parameter	Min	Typ	Max	Units
Operating Temperature	-45		+85	°C
Non-operating Temperature	-55		+125	°C
Relative humidity		95		%
Altitude		10,000		feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

### Ordering Information:

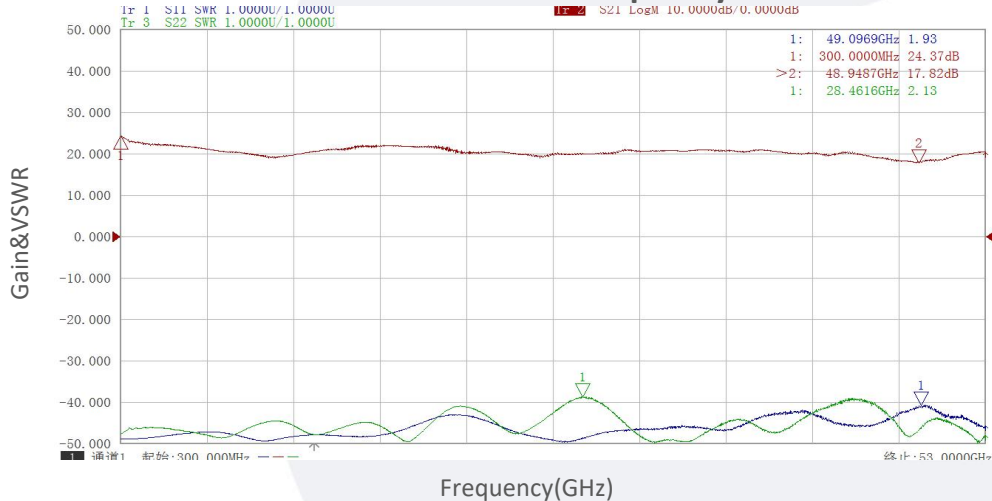
Base Number	Description	Revision
TLLA50K53G-12-50	Low Noise Amplifier, 50KHz-53GHz, Noise Figure:5.0dB, Gain:12 dB,P1dB:15dBm,+8V DC,Without Heatsink	Rev.1.1
TLLA50K53G-12-50-HS	Low Noise Amplifier, 50KHz-53GHz, Noise Figure:5.0dB, Gain:12 dB,P1dB:15dBm,+8V DC,With Heatsink	Rev.1.1

### Typical Performance Data:

#### Gain&VSWR vs Frequency



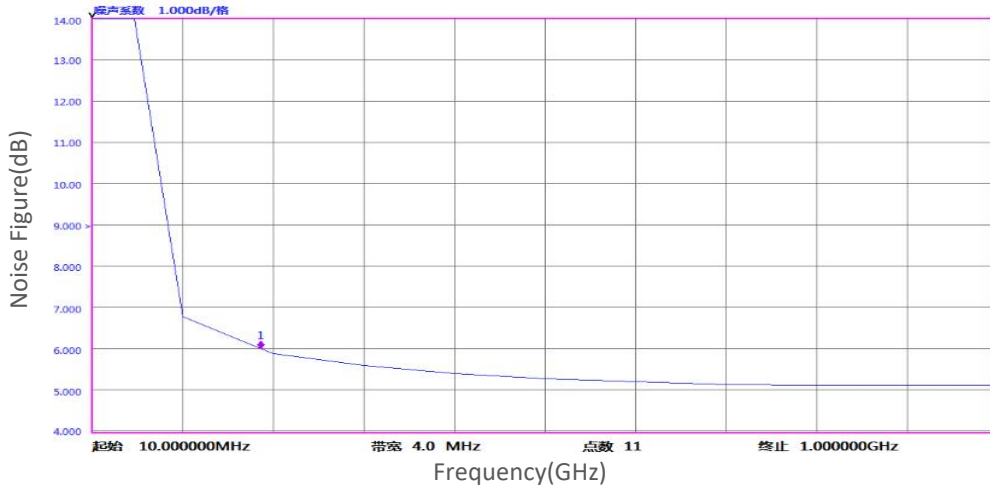
#### Gain&VSWR vs Frequency



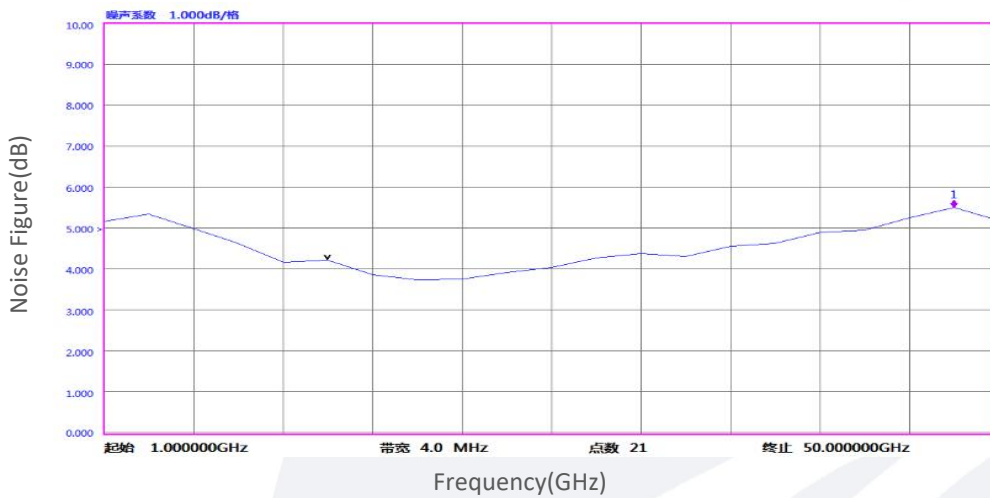
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

**Typical Performance Data:**

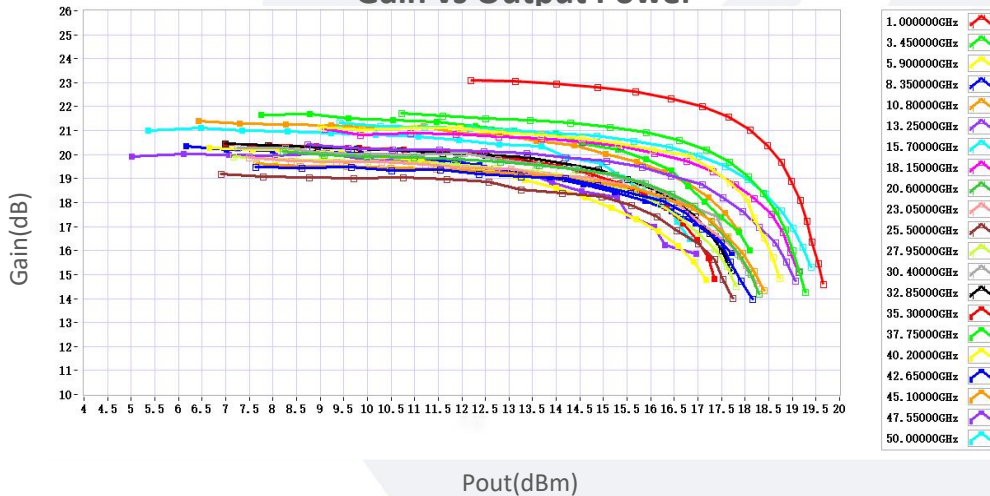
**Noise Figure vs Frequency**



**Noise Figure vs Frequency**



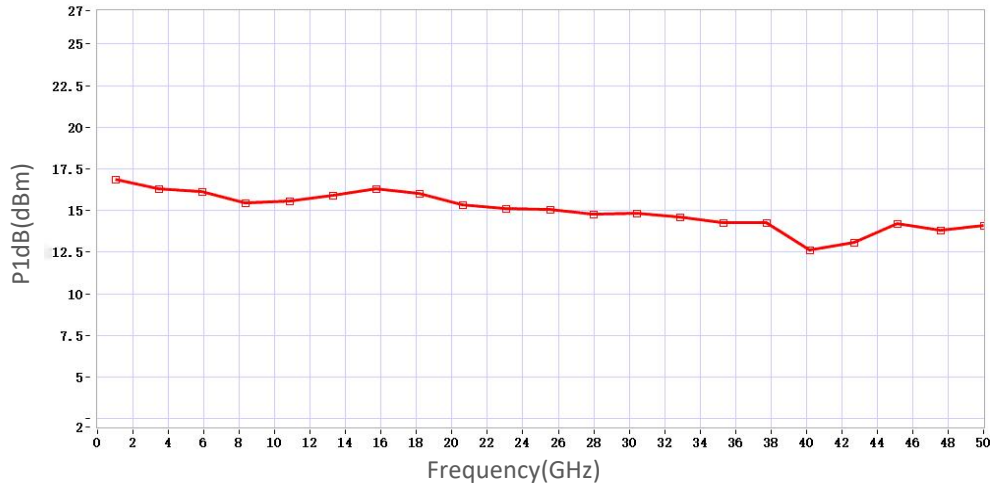
**Gain vs Output Power**



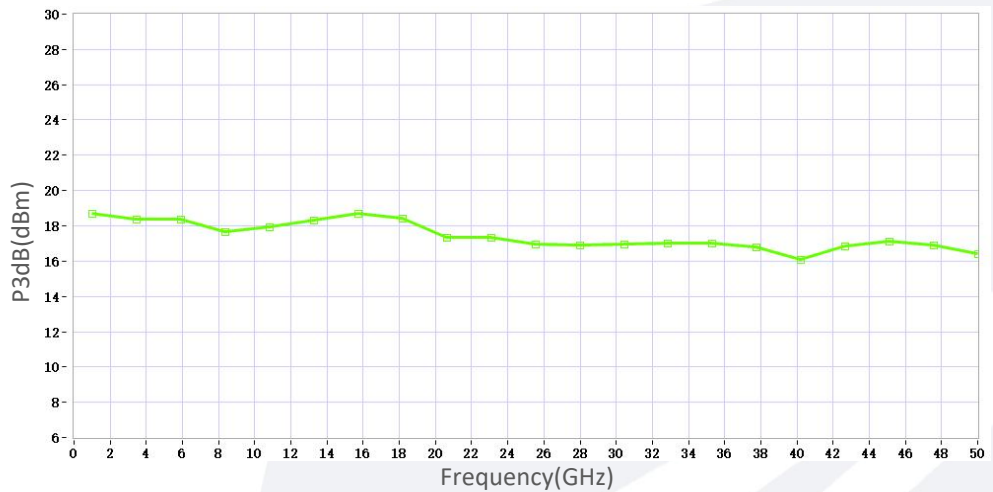
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

### P1dB vs Frequency



### P3dB 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.