泰莱微波
Talent Microwave

Suzhou Talent Microwave, Inc
sales@talentmw.com
www.talentmw.com

Wide Band Bench Top Power Amplifier

2-22GHz/45dB Gain/37dBm Psat

Model: TLPA2G22G-45-37-BC

TLPA2G22G-45-37 is a wide band bench top power amplifier with a typical small signal gain of 45dB and a nominal Psat of 37dBm across the frequency range of 2 to 22 GHz. The power amplifier input connector is SMA-female and output connector is SMA-female. The operating temperature of this product is -40 ºC to +70 ºC.

Features

- Frequency Range: 2-22GHz
- Small Signal Gain: 45dB Typical
- Output Saturation Power: 37dBm Typical
- 50Ω Matched Input / Output
- Over Temperature Protection
- Over Current Protection

Electrical Characteristics (25℃)

Parameter		Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		2		20	20		22	GHz
Small Signal Gain		45	50			45		dB
Gain Flatness			±3.0			±4.0		dB
Gain Variation Over Temperature (-40ºC~+70ºC)			±3.0			±3.0		dB
Input VSWR			1.5	2.0		1.8		:1
Output 1dB Compression Point (P1dB)			35			34		dBm
Saturated Output Power (Psat)		36	38		34	36		dBm
Supply Current (220VAC)			0.5			0.5		A
Power Added Efficiency (PAE)			15			10		%
IM3 (@P1dB)			10			10		dBc
Turn On/Off Speed (RF Switch)	ON		100			100		ns
	OFF		100			100		ns
Weight		13 Max						lbs
Input / Output Connectors		SMA-Female						
Material & Surface Finish		Copper, Aluminum & Black Painted						

Note: Talent reserves the right to make changes to the product(s) or information contained herein without notice.

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Absolute Maximum Ratings

Parameter	Rating
Operating Voltage	100VAC ~ 250VAC
*RF Input Power	0dBm
ESD sensitivity (HBm)	Class 0, passed 125V

*Maximum RF input power is set to assure safety of amplifier. Input power may be increased at own risk to achieve full power of amplifier. Please reference gain and power curves.

Environmental Specifications And Test Standards

Parameter	Rating
*Operating Temperature	-40ºC to +70ºC (Case Temperature)
*Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC to +85ºC (5 Cycles / 10 hours)
Vibration (MIL-STD-810F)	25g rms (15 degrees 2KHz) endurance, 1 hour per axis
High Temperature Burn In	Temperature +70ºC for 72 Hours
Shock	20G for 11msc half sin wave, 3 axis both directions
Altitude	10,000 Ft
Relative humidity	100% RH at 35ºc, 95%RH at 40ºc

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

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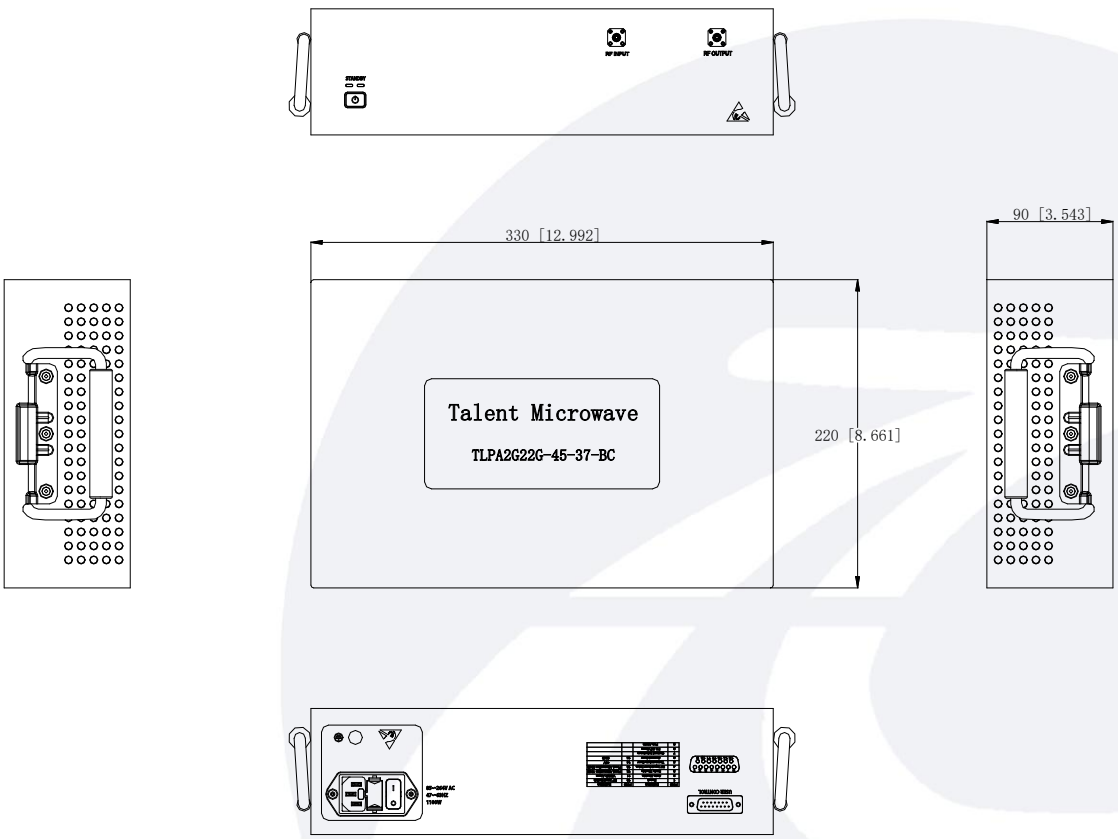
Ordering Information

Product Number	Description
TLPA2G22G-45-37	Power amplifier 2-22GHz. Gain:45dB, Psat:37dBm, +28VDC, Without Heatsink.
TLPA2G22G-45-37-HS	Power amplifier 2-22GHz. Gain:45dB, Psat:37dBm, +28VDC, With Heatsink.
TLPA2G22G-45-37-BC	Power amplifier 2-22GHz. Gain:45dB, Psat:37dBm, 220VAC, With Heatsink.

Outline Drawing



Notes:
1. Package Material: Copper, Aluminum.
2. Plating: Black Painted.
3. All dimensions are in millimeters [inches].
4. Heat sink required during operation. If customer would like to use their own cooling method, please make sure the amplifier will operate under the specs that listed in page 2 of this datasheet.
5. Standard torque wrench must be used to secure RF connectors.

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Control Connector Description

Pin	Name	Function	Initial State	Description	Applied
1	Reset	Control	High	Resets PA when logic Low is applied and released	Yes
2	PA ON/OFF	Control	LOW	Applying logic High opens amplifier RF output	No
3	RF Switch	Control	LOW	Applying logic High turns OFF RF front-end switch to terminator	Yes
4	Gate Disable	Control	LOW	Appling logic High disables gate of amplifiers	Yes
5	Fixed Attenuation 10dB	Control	LOW	Applying and holding logic High to enable 10dB fixed attenuation	No
6	Fixed Attenuation 20dB	Control	LOW	Applying and holding logic High to enable 20dB fixed attenuation	No
7	Calibration	Control	LOW	Applying logic High startup calibration	No
8	Calibration indication	Indicator	LOW	Default output low level, output high level during calibration state	No
9	PA Off Alarm	Indicator	LOW	Pin will be latched to logic High when any of the protection limit is reached	Yes
10	Current Over	Indicator	LOW	Pin will be latched to logic High when drain current limit is reached or current imbalance	Yes
11	Temperature Over	Indicator	LOW	Pin will be latched to logic High when amplifier is driven over temperature	Yes
12	RF Input Over Drive	Indicator	LOW	Pin will be latched to logic High when input signal is over limit	No
13	VSWR	Indicator	LOW	Pin will be latched to logic High when output reflection is over limit	No
14	+5V User	Power Supply	+5V	+5V DC is provided for reference*	Yes
15	GND	Ground	Ground	Ground	Yes

Notes:

- HIGH/LOW voltages are standard TTL signals 0V-1V = Low. 2V-5V = High.
- Matching connector and cable will be shipped with the product.
- Applied=Yes means the feature is included. Applied=No means the feature is not included with this model.
- 5V reference supply can source 200mA.

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Packing List

Description	QTY
1. AC Power Supply Cable	1
2. Control Cable	1
3. Coaxial Adapter (Consulting sales)	0
4. Waveguide Twist (Consulting sales)	0

Amplifier Usage Precautions

1. Ensure that the amplifier input and output ports are safely terminated into a proper 50Ω load before turning on the power. Never operate the amplifier without a load.
2. Power supply must be able to provide adequate current for the amplifier. Power supply should be able to provide 1.5 times the maximum current.
3. In most cases, talent amplifiers will withstand severe mismatches without damage. However, operation with poor loads is discouraged. If prolonged operation with poor or unknown loads is expected, an external device such as an isolator or circulator should be used to protect the amplifier.
4. Ensure that the power is off when connecting or disconnecting the input or output of the amp.
5. Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

Operating Procedure

Power-On Instructions	1. Connect ground.
	2. Connect input and output with 50 Ohm source/load. (Input and Output VSWR < 2:1)
	3. Connect the AC power supply cable and switch on.
Power-Off Instructions	1. Turn off the power supply and disconnect the power cable.
	2. Remove RF Connection.
	3. Remove ground.