

**Features**

- Gain: 33dB Typical
- Saturated Output Power: 30dBm Typical
- Supply Voltage: +15V
- 50 Ohm Matched Input / Output
- Size:


**Typical Applications**

- Wireless Infrastructure
- Military & Aerospace
- Fiber Optics

 RF Microwave & VSAT  
Test Instrument

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	1-30		30-45				GHz
Gain		35			30		dB
Gain Flatness		±4			±7		dB
Gain Variation Over Temperature (-45 ~ +85)		±3			±3		dB
Input Return Loss		10			8		dB
Output Return Loss		12			8		dB
Output 1dB Compression Point (P1dB)		29			26		dBm
Saturated Output Power (Psat)		30			27		dBm
Isolation S12		-65			-65		dB
Supply Current (Vcc=+15V)		600	800		600	800	mA
Input Max Power (No damage)	Psat – Gain						dBm

Weight		Impedance	50ohms
Input / Output Connectors	2.92-Female	Material	Aluminum/copper
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness	Package Sealing	Epoxy Sealing (Standard)
	Option: Gold 80 micron; Nickel 180 micron thickness		Hermetically Sealed (Option with extra charge)

## QOTANA TECHNOLOGIES

## Wide Band Power Amplifier 1GHz~45GHz

### Absolute Maximum Ratings

Supply Voltage	+18V
RF Input Power (RFIN)	Psat-Gain

### Biassing Up Procedure

Step 1	Connect Ground Pin
Step 2	input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss)
Step 3	Connect +15V biasing

### Power OFF Procedure

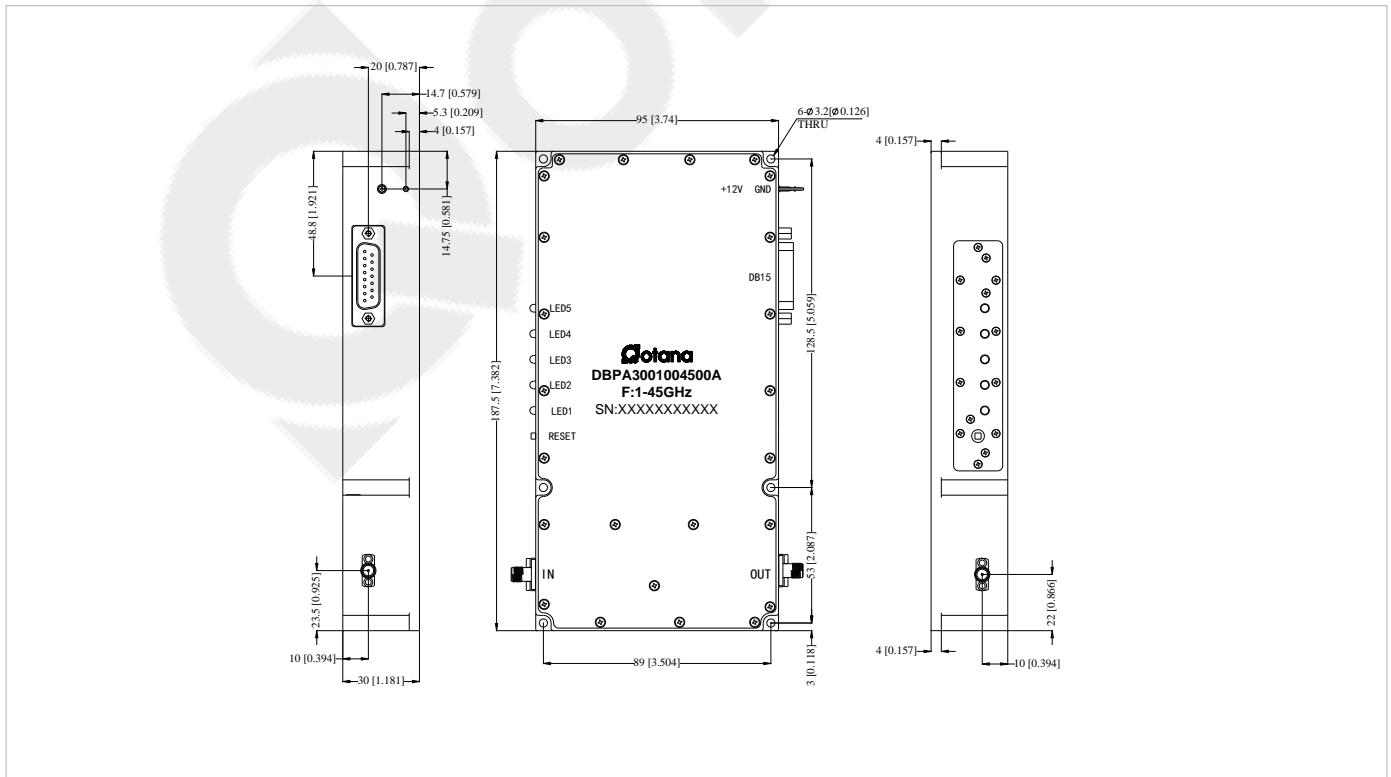
Step 1	Turn off +15V biasing
Step 2	Remove RF connection
Step 3	Remove Ground Pin

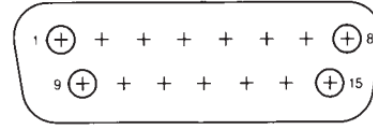
### Environmental Specifications

Operational Temperature	-45°C~+85°C
Storage Temperature	-55°C~+125°C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

### Outline Drawing:

All Dimensions in mm (inches)



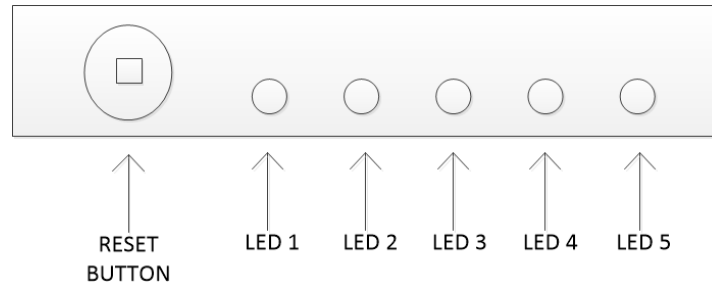
**Protection Connector Table:**


Pin #	Name	Function	Initial State	Description	Applied
1	Reset	Control		Resets PA when logic <u>LOW</u> is applied and released	Yes
2	Drain Disable	Control	LOW	Applying logic <u>HIGH</u> disables drains of amplifiers	Yes
3	Gate Disable	Control	LOW	Applying logic <u>HIGH</u> disables gates of amplifiers	Yes
4	RF IN Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when input signal is over limit	No
5	Temp Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when amplifier is driven over temperature	Yes
6	Current Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when drain current limit is reached	Yes
7	ID Imbalance	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when an imbalance in the drain current of the combining branches occurs	Yes
8	PA input power	Indicator		PA input power is represented by voltage	No
9	PA output power	Indicator		PA output power is represented by voltage	No
10	PA output reflection power	Indicator		PA output reflection power is represented by voltage	No
11	VSWR	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when output reflection is over limit	No
12	Temp Signal	Indicator		PA carrier case temperature is represented by voltage	Yes
13	+5V	Power Supply	+5V	+5V DC is supplied for reference	Yes
14	GND	Ground	GND	Ground	Yes
15	GND	Ground	GND	Ground	Yes

HIGH/LOW voltages are standard TTL signals:

0.0V-0.8V = LOW

2V-5V = HIGH

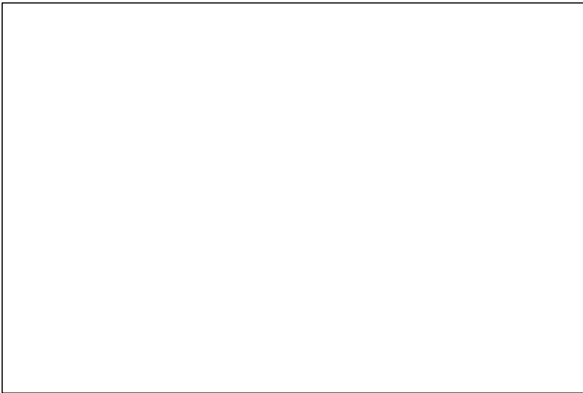
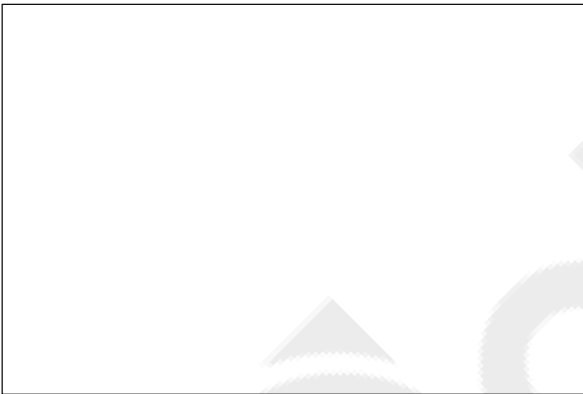
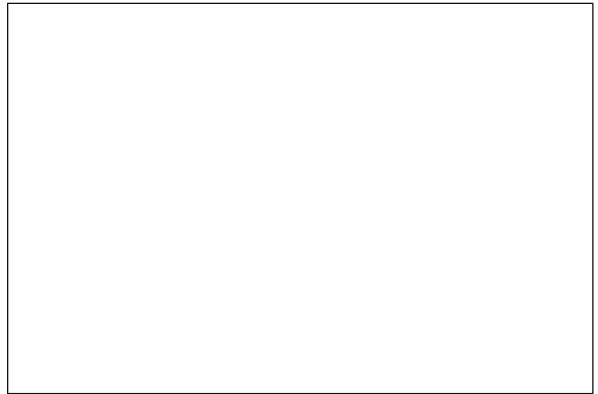
**Protection Connector Table:**


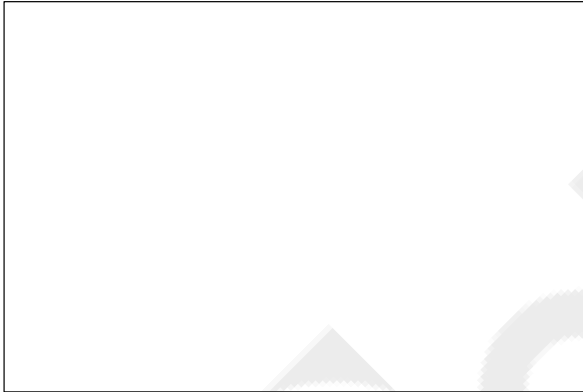
	Name	Function	Initial State	Description	Applied
	RESET	Control		Manual reset button to reset PA	Yes
LED 1	POWER	Indicator	RED Color	LED will light to RED color when supply power is applied	Yes
LED 2	RF IN	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when input signal is over limit *	No
LED 3	VSWR	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when output reflection is over limit *	No
LED 4	ID	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when an imbalance in the drain current of the combining branches occurs OR if a drain current limit is reached *	Yes
LED 5	TEMP	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when driven over temperature *	No

HIGH/LOW voltages are standard TTL signals:

0.0V-0.8V = LOW

2V-5V = HIGH

**Gain****Input VSWR****Output VSWR****Isolation****Gain vs. Output Power****P1dB vs. Frequency**

**Output Third Order Intercept (IP3)****Current****2nd Harmonic Wave Output Power****3rd Harmonic Wave Output Power****4th Harmonic Wave Output Power**

QOTANA TECHNOLOGIES and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. Visit [www.qotana.com](http://www.qotana.com) for additional data sheets and product information.