



## PLA-05W-433

## Linear Power Amplifier Module

## PLA-05W-433AT

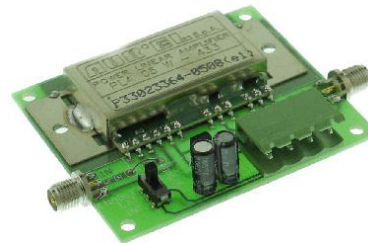
## Linear Power Amplifier Assembly

The **PLA-05W-433** is a linear monolithic power amplifier (classAB1) operating at UHF frequencies and offers low signal distortion and low harmonic generation. Either digital or analog input carriers are suitable. Where local regulations permit, the **PLA-05W-433** is ideal for applications where increased communication range is required or where RF interference creates transmission problems.

**PLA-05W-433 module**



**PLA-05W-AT Assembly Module**



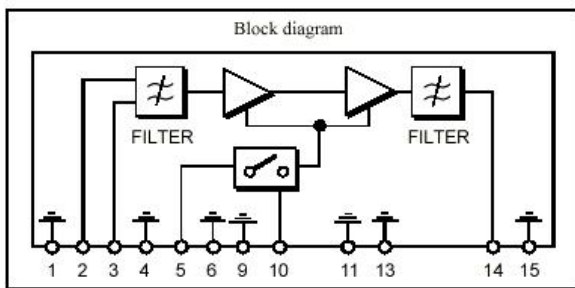
### PLA-05W-433 Technical Specification

- I-ETS 300 220 compliant (@ 12 V), class IV
- Operating frequency: 430 to 435 MHz
- High-miniaturization SMT circuit
- Enclosed in metal for RF shielding and heat dissipation
- Double RF input pin to optimize input compatibility: 0-5dBm and 7-10dBm inputs
- Power supply: + 12 Vdc (+ 15 Vdc Max.)
- Output Power ( $\pm 1$  dBm) into 50 $\Omega$ : +24 dBm @ 12 Vdc (+27 dBm @ 15 Vdc)
- Dimensions: 60 x 34 x 7.3 mm.
- Pin pitch 2.54mm

### PLA-05W-AT PCB Assembly Features

- RPSMA input and output RF connectors
- Selectable On-board 5VDC amplifier enable or external 5VDC enable
- Phoenix type 4 pin connector power supply input and external enable input
- User configurable RF input power, via wire jumper

### Module Pin Description & Block Diagram



1,4,6,9, 11,13,15	Ground
2	+7 to 10dBm Input
3	0 to +5dBm Input
5	+V (12 to 15Vdc)
10	Tx Enable (+3 to 8Vdc)
14	+24 to 27dBm Output (50 $\Omega$ )

Table 1 Typical current consumption and performances

Power Supply pin 5 (V)	Enable pin 10 (V)	Power In pin 2 (dBm)	Power In pin 3 (dBm)	Power Out pin 14 (dBm)	Consumption (mA)
12 to 15	0	-	-	-	0
12	+3 to 8	N.C.	0	23	150
12	+3 to 8	N.C.	5	25	180
12	+3 to 8	7	N.C.	23	150
12	+3 to 8	10	N.C.	25	180
15	+3 to 8	N.C.	0	24	180
15	+3 to 8	N.C.	5	27	210
15	+3 to 8	7	N.C.	24	180
15	+3 to 8	10	N.C.	27	210

### Conversion Formula: dBm to P(mW)

$$\text{dBm} = 10 \log P/1\text{mW}$$

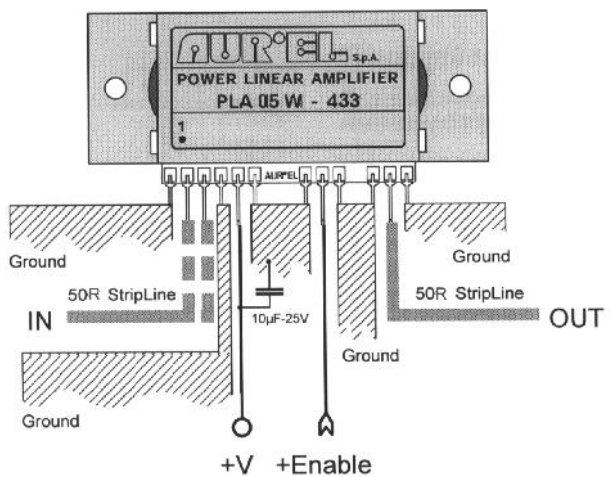
$$P = \log^{-1} \text{dBm}/10$$

Examples: 27dBm = 501mW  
 25dBm = 316mW  
 24dBm = 251mW  
 23dBm = 199mW

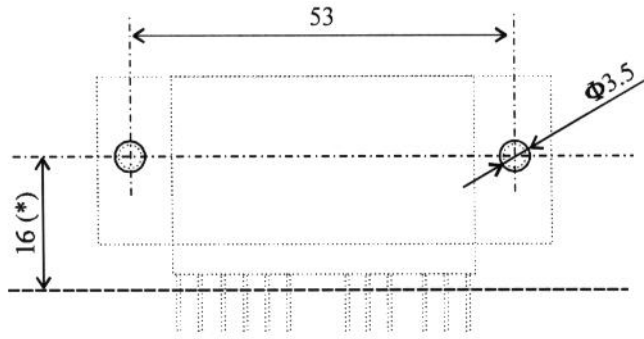
### Electrical Connections

Utilizing a two layer printed circuit board, note the following points:

- with a 1mm thick FR4 PCB the 50W stripline is 1.8 mm wide
  - with 1.6mm thick FR4 PCB the 50W stripline is 2.9mm wide
- keep all pins and connections as short as possible



## Mounting Hole Plan for Mechanical Connection to Heatsink



\* Minimum distance from printed circuit

If the amplifier is operating continually at room temperature over 40°C, it is recommended to mount a heatsink of at least 25cm<sup>2</sup> using the two mounting holes provided. Thermal compound should be applied between the PLA-05W and the heatsink.

### PLA-05W-433AT

The PLA-05W-433AT modules have the PLA-05W-433 RF amplifier mounted on FR4 printed circuit board, together with RPSMA RF connectors and power supply connector.

The PLA-05W-433AT RF amplifier module assembly below provides an ideal “patch-in” interface between a 433MHz transmitter’s antenna port and an external antenna. The amplifier assembly includes RPSMA RF connectors for the RF IN and Antenna OUT ports. The **-Amplifier Enable-** slide switch allows selection between either an external enable voltage or the on-board enable voltage.

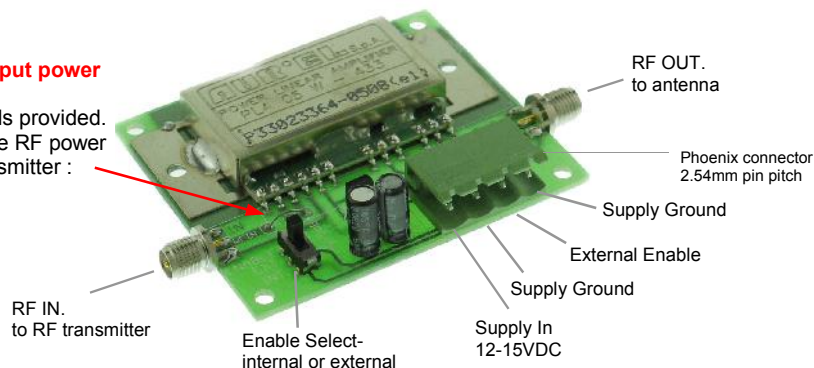
With the slide switch to the INT. position, the amplifier is enabled via 5VDC derived from the PLA-05W-433AT’s power supply input. In the EXT. position, the amplifier is enabled via an externally supplied 5VDC source.

RPSMA antenna extension cables and antenna are available from ABACOM. Please visit [www.abacom-tech.com](http://www.abacom-tech.com) for details.

**Please Note:** the user is required to solder-in a wire jumper to configure the RF input of the module. See figure below:

#### User configurable RF input power jumper-

Solder wire link in the pads provided. Configure according to the RF power characteristics of the transmitter : 0-5dBm or 7-10dBm



## PLA-05W-433AT Mechanical Dimensions

