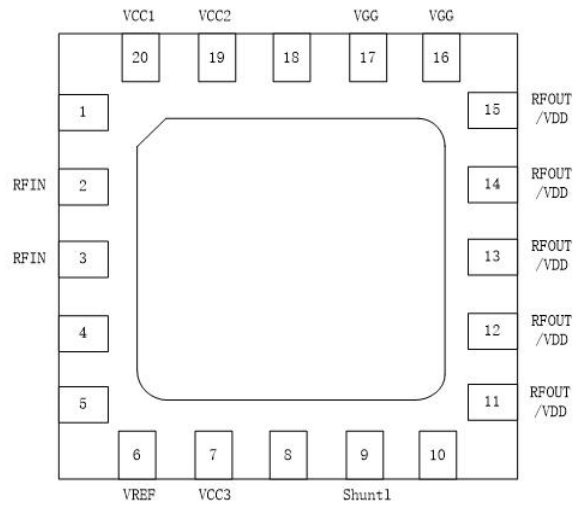


### Typical Performance

- Frequency: 5.1~6.1GHz
- Voltage: 5V & 28V
- Gp@Psat: 34dB
- Psat: 5W
- Package: QFN 4×4-20L



### Applications

- WiFi 6/6E
- Wireless Data Transmission

### Product Description

Innnotation's YPH50603437 is a 5W RF power amplifier chip with an internal integrated ESD protection unit for high reliability. The internal hybrid integration scheme requires a negative voltage, and it operates over the frequency range of 5.1~6.1GHz with an output power of 5W (VCC=5V, VDD=28V). The chip is packaged in a standard surface-mount QFN4x4-20L package for easy system integration.

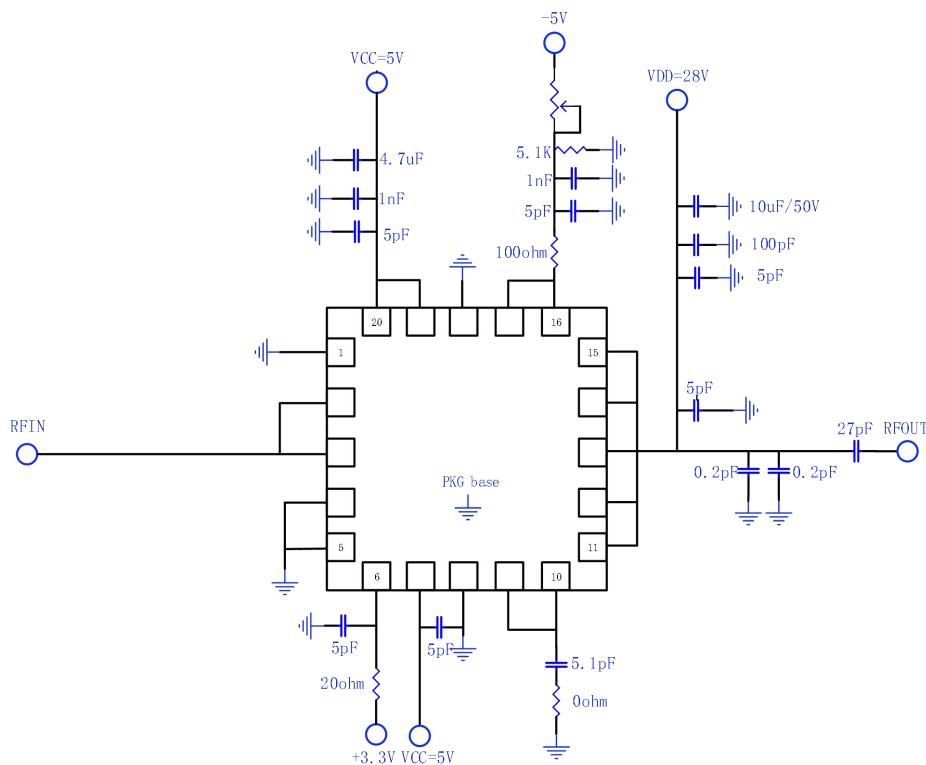
### Pin Definition

| Pin No.       | Symbol         | Description                                |
|---------------|----------------|--------------------------------------------|
| 1,4,5,8,10,18 | N/C            | Not connected                              |
| 2,3           | RFIN           | RF signal input                            |
| 6             | VREF           | Reference Voltage of Driver                |
| 7,19,20       | VCC3/VCC2/VCC1 | Collector Voltage of Driver                |
| 9             | Shunt L        | For matching                               |
| 16,17         | VGG            | Gate Voltage of Last Stage PA              |
| 11-15         | RFOUT/VDD      | RF output & Drain Voltage of Last Stage PA |
| PKG base      | GND            | Ground                                     |

### Electrical Characteristics

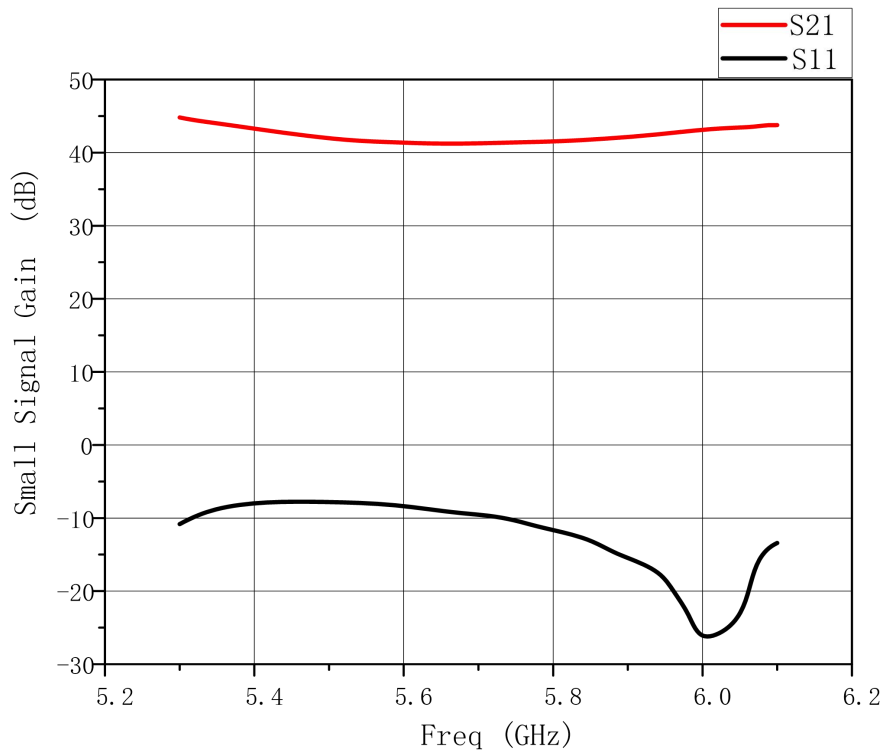
| Parameter                | Condition                       | Specification |      |       | Unit |
|--------------------------|---------------------------------|---------------|------|-------|------|
|                          |                                 | Min.          | Typ. | Max.  |      |
| Frequency                |                                 | 5.1           | 5.7  | 6.1   | GHz  |
| Test Frequency           |                                 | 5.3           | 5.7  | 6.1   | GHz  |
| Gain@Small Signal        |                                 | 42.3          | 41.2 | 42.9  | dB   |
| Output@Psat              |                                 | 38.1          | 38.3 | 38.1  | dBm  |
| S11                      |                                 | -10.8         | -9.6 | -13.4 | dB   |
| Eff@Psat                 |                                 | 50            | 48   | 47    | %    |
| ICQ of Driver            | VCC1=VCC2=VCC3=5V<br>VREF=3.23V |               | 250  |       | mA   |
| IDQ of Last Stage PA     | VDD=28V<br>VGG=-2.28V           |               | 220  |       | mA   |
| Current of Driver        | VCC1=VCC2=VCC3=5V<br>VREF=3.23V | 860           | 960  | 990   | mA   |
| Current of Last Stage PA | VDD=28V<br>VGG=-2.28V           | 450           | 480  | 490   | mA   |

### Schematic of Matching Network

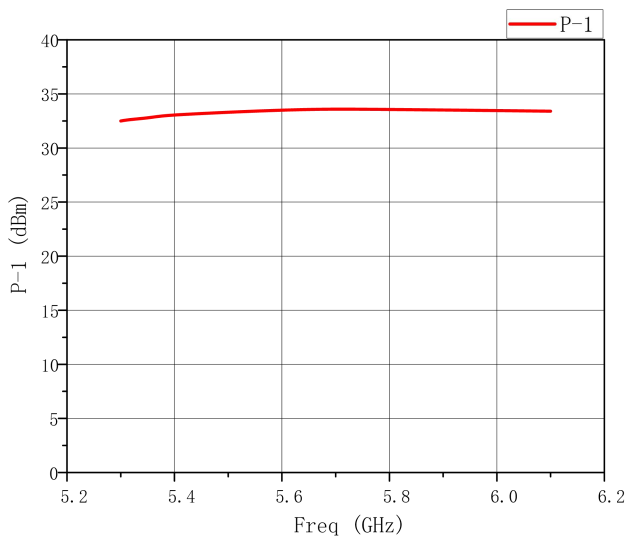


Small Signal S21 & S11

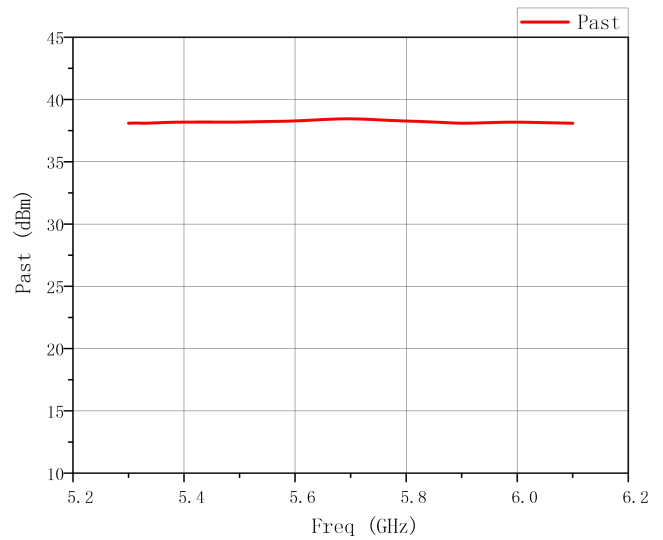
### Test Results



P-1 v.s Freq

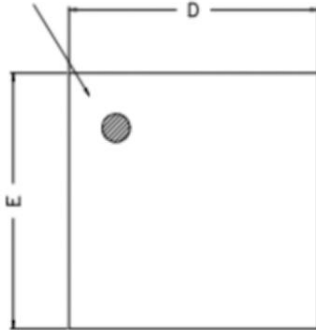


Psat v.s Freq



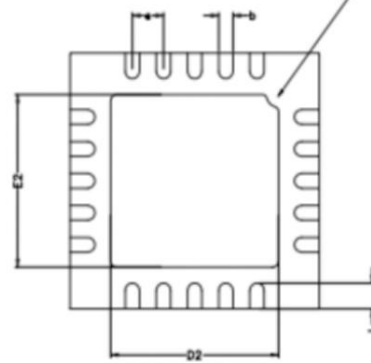
## Package Outline

PIN 1 DOT  
BY MARKING



TOP VIEW

PIN #1 IDENTIFICATION  
CHAMFER R0.2



BOTTOM VIEW



SIDE VIEW

| COMMON DIMENSIONS(MM) |                  |      |      |
|-----------------------|------------------|------|------|
| PKG.                  | W:VERY VERY THIN |      |      |
| REF.                  | MIN.             | NOM. | MAX  |
| A                     | 0.70             | 0.75 | 0.80 |
| A1                    | 0.00             | -    | 0.05 |
| A3                    | 0.2 REF.         |      |      |
| D                     | 3.95             | 4.00 | 4.05 |
| E                     | 3.95             | 4.00 | 4.05 |
| b                     | 0.18             | 0.23 | 0.30 |
| L                     | 0.30             | 0.40 | 0.50 |
| D2                    | 2.55             | 2.70 | 2.80 |
| E2                    | 2.55             | 2.70 | 2.80 |
| e                     | 0.5 BSC          |      |      |