# BROADBAND LOW NOISE AMPLIFIER
# ABL0600-01-3040DP, REV01

## Features:

- Broad band operation from 10MHz to 6 GHz
- PIN diode limiter protected input prevent input over drive damage
- SMA female connector I/O
- Single DC power supply, internal voltage regulator, operating voltage from +9.5~+15V
- Operating temperature -40~+85°C, storage temperature -55~+125°C


## General Description

ABL0600-01-3040DP is a two stage InGaP/GaAs HBT based broadband low noise amplifier module with input PIN diode limiter protection. It operates in the frequency from 10MHz to 6.0 GHz and provides 34dB of typical small signal gain with 3.0dB typical noise figure, excellent gain flatness, as well as good VSWR at both input and output. The amplifier requires only a single DC power supply. Its built-in voltage regulator allows the amplifier being used at DC voltage as low as 9.5V to as high as +15V.

## Electrical Specifications

| Parameters | Units | Specifications | | |
|---|---|---|---|---|
| | | Minimum | Typical | Maximum |
| Frequency Range | MHz | 10.0 | | 6000.0 |
| Noise Figure (from 50MHz) @25°C | dB | | 3.5 | 4.5 |
| Nominal SS Gain @25°C | dB | 27.0 | 30.0 | 33.0 |
| Gain flatness | dB | | +/-1.0 | +/-1.25 |
| Gain Variation | dB | | +/-1.0 | |
| P-1dB Compression Point | dBm | +12.5 | +14.5 | |
| Saturated Output power | dBm | +15.5 | +16.5 | |
| Output 3rd order intercept point power, tested with two tones spaced 1MHz apart | dBm | +33.0 | +37.0 | |
| Input VSWR | - | | 1.5:1 | 2.0:1 |
| Output VSWR | - | | 1.5:1 | 2.0:1 |
| Reverse Isolation | dB | 40.0 | 45.0 | |
| Spurious | dBc | | | -60.0 |
| Input no damage power | dBm | +30.0 | | |
| Operating Temperature | °C | -40.0 | | +85.0 |
| Survival Temperature | °C | -55.0 | | +125.0 |
| DC Voltage | V | +9.5 | +12.0 | +15.0 |
| DC Supply Current | mA | 90.0 | 100.0 | 120.0 |
| In/Out connectors | - | 50 ohm SMA female | | |
| Size | inches | 1.70×0.95×0.375 | | |

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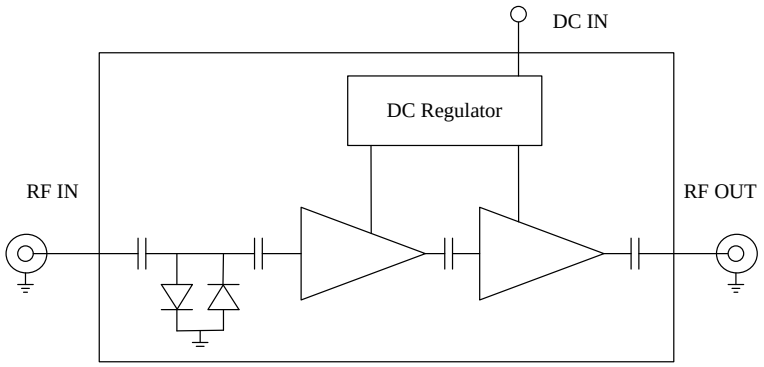
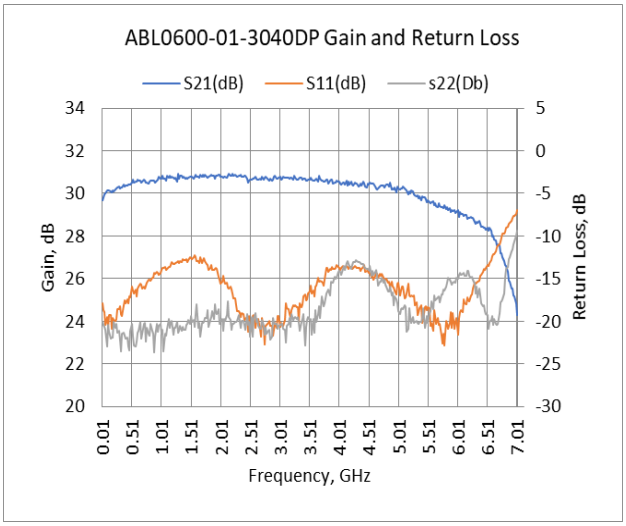
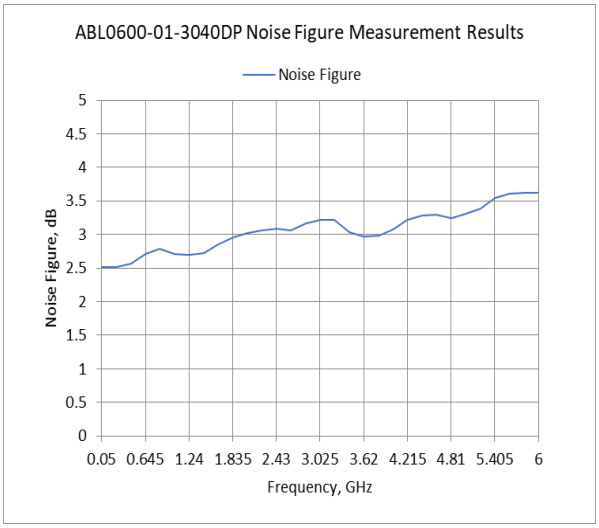
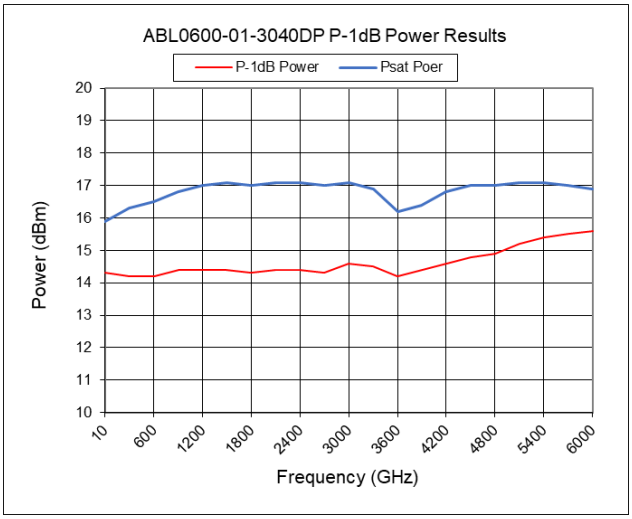
Functional Diagram

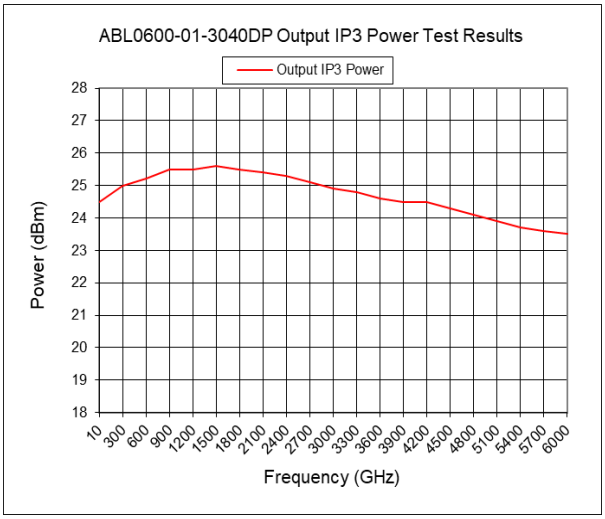



Typical Test Results

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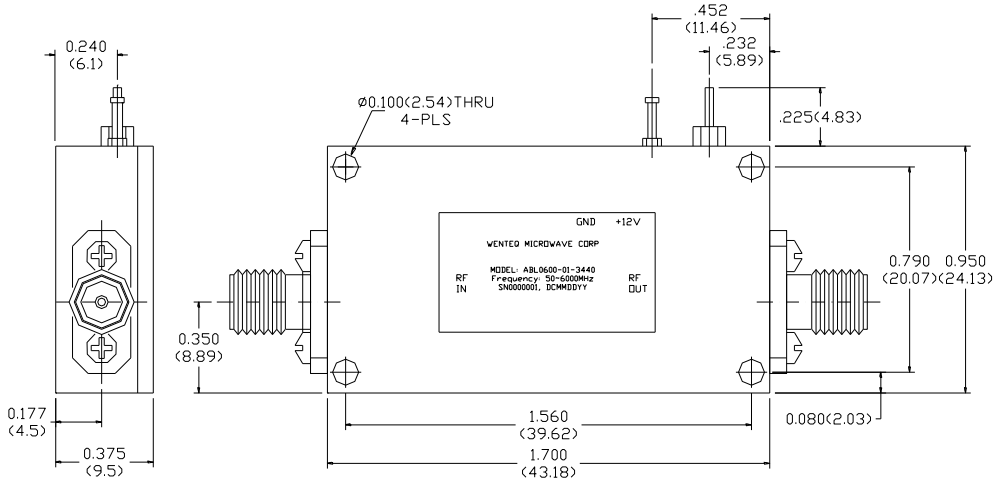
## Mechanical Structure:




Note: All units in inches (mm).

## Housing Material and Surface Finish:

Body and cover material: aluminum
Surface finish: nickel plated
Connector material: Copper
Connector surface finish: gold plated

## Absolute Maximum Ratings

| | |
|---|---|
| DC Voltage | +15V |
| RF Input Power | +30 dBm |
| DC Voltage at RF I/O | ±25V |
| Storage Temperature | -55~+125°C |
| Operating Temperature | -40~+85°C |

## Revision History:

| Revision | Date | Description | Comments |
|---|---|---|---|
| A00 | 01/08/2020 | Initial Release | |
| A01 | 05/18/2023 | Input Limiter Change | |
| | | | |

Electrostatic sensitive device, please observe precautions for handling this amplifier.

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