# AD8336 壓控可變增益放大器模組 VGA 手動/程式控制 60dB 寬動態增益調節

## 2 模块参数

| 模块参数 | | |
|---|---|---|
| 参数名称 | 参数值 | 备注 |
| 模块型号 | KW_VCA8336 | |
| 模块类型 | 压控增益放大器 | |
| 模块供电 | ±5V--±15V | 双电源供电 |
| 静态电流 | ±25mA | 仅供参考 |
| 模块带宽 | DC--25MHz | 为兼容直流信号默认输入输出0R电阻直连。如无需直流信号放大或接频谱测试可将输入输出电阻改为0.1uF电容即可。 |
| 输入阻抗 | 51欧 | 更改R2可调整输入阻抗 |
| 输出电流 | ±20mA(MAX) | |
| 增益控制范 | 0 to +60(dB) | |
| 控制电压 | 1.8V--3.2V | |
| 最大不饱和 | 6.4Vpp@±5V供电 | ±12V供电输出可达20Vpp |
| 模块保护 | 电源反接保护 | |
| 模块特点 | 多种 | 可放大直流信号，具有电源指示灯 |
| 模块应用 | 多种 | 工业过程控制、高性能AGC系统、I/Q信号处理、视频、工业和医疗超声、雷达接收机等 |
| 模块重量 | 12g | |
| 模块尺寸 | 40*40*13 | 长*宽*高(mm) |
| 工作温度 | -25~+75℃ | |
| 模块接口 | SMA | SMA、3.81-3P |

本店AD8336模块默认VGA增益范围配置为0至60dB，此时带宽为25M。
用户如需其他增益范围及带宽，可参考下表及芯片手册20-23页。

| R8/R6 | BW(MHZ) | Gain(dB) |
|---|---|---|
| 3 | 150 | -14~+46 |
| 7 | 60 | -8~+52 |
| 15 | 30 | -2~+58 |
| 19 | 25 | 0~+60 |

# 芯片简介

ANALOG DEVICES

## General-Purpose, −55°C to +125°C, Wide Bandwidth, DC-Coupled VGA

AD8336

### FEATURES

- Low noise
  - Voltage noise: 3 nV/√Hz
  - Current noise: 3 pA/√Hz
- Small-signal BW: 115 MHz
- Large-signal BW: 2 V p-p = 80 MHz
- Slew rate: 550 V/µs, 2 V p-p
- Gain ranges (specified)
  - −14 dB to +46 dB
  - 0 dB to 60 dB
- Gain scaling: 50 dB/V
- DC-coupled
- Single-ended input and output
- Supplies: ±3 V to ±12 V
- Temperature range: −55°C to +125°C
- Power
  - 150 mW at ±3 V, −55°C < T < +125°C
  - 84 mW at ±3 V, PWRA = 3 V

### APPLICATIONS

- Industrial process controls
- High performance AGC systems
- I/Q signal processing
- Video
- Industrial and medical ultrasound
- Radar receivers

### GENERAL DESCRIPTION

The AD8336 is a low noise, single-ended, linear in dB, general-purpose variable gain amplifier, usable over a large range of supply voltages. It features an uncommitted preamplifier with a usable gain range of 6 dB to 26 dB. The VGA gain range is 0 dB to 60 dB, with absolute gain limits of −26 dB to +34 dB. When the preamplifier gain is adjusted for 12 dB, the combined 3 dB bandwidth of the preamplifier and VGA is 100 MHz, and the amplifier is fully usable to 80 MHz. With ±5 V supplies, the maximum output swing is 7 V p-p.

Because of the X-AMP® architecture, frequency response is maintained across the entire gain range of the VGA. The differential gain control interface provides precise linear in dB gain scaling of 50 dB/V over the temperature span of −55°C to +125°C and is simple to interface with a variety of external sources.

The large supply voltage range makes the AD8336 suited for industrial medical applications and video circuits. Dual-supply operation enables bipolar input signals, such as those generated by photodiodes or photomultiplier tubes.

The fully independent voltage feedback preamplifier allows both inverting and noninverting gain topologies. The AD8336 can be used within the specified gain range of −14 dB to +60 dB by selecting a preamplifier gain between 6 dB and 26 dB and choosing appropriate feedback resistors. For the nominal preamplifier gain of 4×, the overall gain range is −14 dB to +46 dB.

If required, quiescent power is limited to a safe level by asserting the PWRA pin.

### FUNCTIONAL BLOCK DIAGRAM

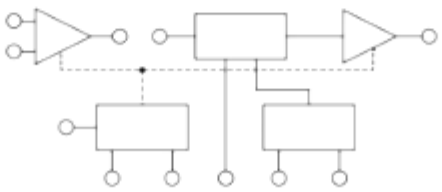
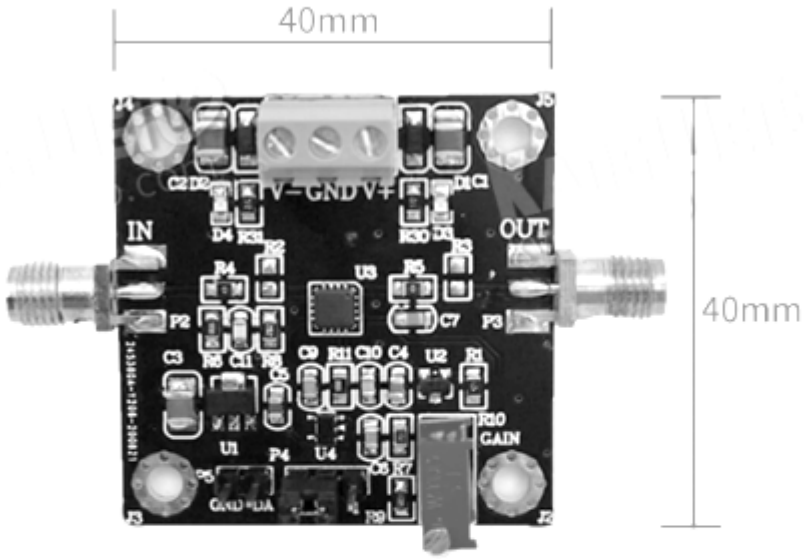
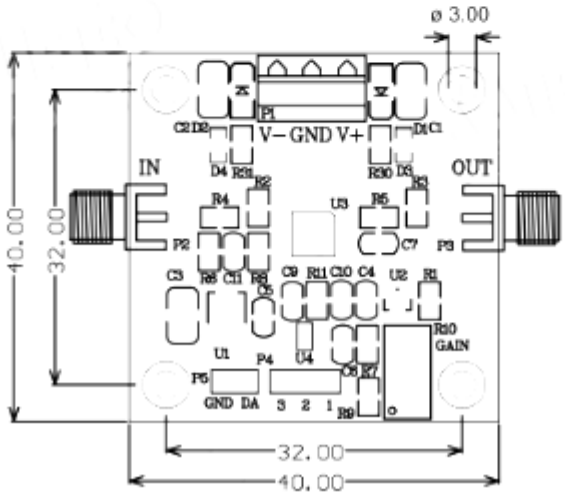


Figure 1

# 模块尺寸图


40mm
V- GND V+
IN
OUT
GAIN
40mm


ø 3.00
V- GND V+
IN
OUT
GAIN
40.00
32.00
32.00
40.00