

16 通道 DAS，内置 16 位、双极性输入、双路同步采样 ADC

1 特性

- 16 通道、双路、同步采样输入
- 可独立选择的通道输入范围
 - 真双极性: $\pm 10\text{ V}$ 、 $\pm 5\text{ V}$ 、 $\pm 2.5\text{ V}$
- 5 V 单模拟电源， V_{DRIVE} 电源电压: 1.71V 至 5 V
- 完全集成的数据采集解决方案
 - 模拟输入箝位保护
 - 具有 1 M Ω 模拟输入阻抗的输入缓冲器
 - 一阶抗混叠模拟滤波器
 - 片内精密基准电压及基准电压缓冲器
 - 双通道 16 位逐次逼近型寄存器(SAR)ADC
 - 吞吐速率: 2 \times 1 MSPS
 - 通过数字滤波器提供过采样功能
 - 灵活的序列器，支持突发模式
- 灵活的并行/串行接口
 - SPI/QSPI/MICROWIRE/DSP 兼容
- 硬件/软件配置
- 性能
 - 信噪比(SNR): 90.5 dB (1 MSPS)
 - 总谐波失真(THD): -103 dB
 - $\pm 1\text{ LSB INL}$ (典型值), $\pm 0.99\text{ LSB DNL}$ (最大值)
 - 模拟输入通道提供 7 kV ESD 额定值
- 片内自检测功能
- 80 引脚 LQFP 封装

2 应用

- 电力线路监控
- 保护继电器
- 多相电机控制
- 仪器仪表和控制系统
- 数据采集系统(DAS)

3 概述

GD30AD33G0 是一款 16 位 DAS，支持对 16 个通道进行双路同步采样。GD30AD33G0 采用 5 V 单电源供电，可以处理 $\pm 10\text{ V}$ 、 $\pm 5\text{ V}$ 和 $\pm 2.5\text{ V}$ 真双极性输入信号，同时每对通道均能以高达 1MSPS 的吞吐速率和 90.5 dB SNR 采样。

GD30AD33G0 输入箝位保护电路可以耐受高达 $\pm 25\text{ V}$ 的电压。无论以何种采样频率工作，GD30AD33G0 的模拟输入阻抗均为 1 M Ω 。它采用单电源工作方式，具有片内滤波和高输入阻抗，因此无需驱动运算放大器和外部双极性电源。

该器件均内置模拟输入箝位保护、一个双路 16 位电荷再分配 SAR 模数转换器 (ADC)、一个灵活的数字滤波器、2.5 V 基准电压源和基准电压缓冲器以及高速串行和并行接口。

GD30AD33G0 兼容串行外设接口(SPI)/QSPI/DSP/MICROWIRE。

芯片信息¹

PART NUMBER	PACKAGE
GD30AD33G0	LQFP80

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