

16 位、8 通道、500 KSPS、SAR ADC

1 特性

- 16 位分辨率，无失码
- 8 通道多路复用器，可选择输入
 - 单端单端
 - 差分（相对 GND）
 - 伪差分
- 吞吐率：500 kSPS
- INL：典型±0.5 LSB，最大±1.5 LSB（±23 ppm 或 FSR）
- 动态范围：93.3 dB
- SINAD：91.5 dB@20 kHz
- THD：97 dB@20 kHz
- 模拟输入范围：0V - VREF，VREF 可到 VDD
- 多种参考电压类型
 - 内部 4.096 V
 - 外部缓冲（最高 4.096 V）
 - 外接（最高 VDD）
- 内部温度传感器
- 通道序列器，可选单端滤波器，流水线无延迟 Busy 指示，SAR 结构
- 单电源 5 V
 - 1.8 V 至 5 V 逻辑接口
- 串行接口兼容 SPI，MICROWIRE，QSPI，DSP
- 功耗
 - 26 mW@ 500 kSPS
 - 5.2 μW@ 100 SPS
- 待机电流：50 nA
- 20 引脚 4 mm × 4 mm QFN 封装
- 20 引脚 2.4 mm × 2.4 mm WLCSP 封装

2 应用

- 电池供电设备医疗仪器：ECG / EKG
- 移动通信：GPS
- 个人数字助理电力线监测数据采集
- 地震数据采集系统仪器仪表
- 过程控制

3 概述

GD30AD3382 是一款 8 通道、16 位、电荷再分配逐次近似寄存器（SAR）模拟数字转换器（ADC），由单一电源 VDD 供电。GD30AD3382 包含用于多通道、低功耗数据采集系统的所有组件，包括无失码的真 16 bit SAR ADC；8 通道低串扰多路复用器，用于配置输入为单端（参考或不参考 GND）、差分或双极输入；一个内部 4.096 V 低漂移参考源以及输出缓冲器和温度传感器；可选单极滤波器；以及按通道顺序连续扫描的序列器。

GD30AD3382 使用一个简单的串口接口（SPI）来写入配置寄存器和接收转换结果。SPI 接口使用一个单独的电源 VIO，同主机端口电源。功耗随吞吐率的大小而变化。

GD30AD3382 封装为 20 引脚的 QFN 和 20 球的 WLCSP，工作温度范围为-40°C 至+105°C。

产品信息¹

料号	封装类型	尺寸
GD30AD3382	QFN20	4.00mm x 4.00mm
	WLCSP20	2.40mm x 2.40mm

Important Notice

This document is the property of GigaDevice Semiconductor Inc. and its subsidiaries (the "Company"). This document, including any product of the Company described in this document (the "Product"), is owned by the Company according to the laws of the People's Republic of China and other applicable laws. The Company reserves all rights under such laws and no Intellectual Property Rights are transferred (either wholly or partially) or licensed by the Company (either expressly or impliedly) herein. The names and brands of third party referred thereto (if any) are the property of their respective owner and referred to for identification purposes only.

The Company makes no representations or warranties of any kind, express or implied, with regard to the merchantability and the fitness for a particular purpose of the Product, nor does the Company assume any liability arising out of the application or use of any Product described in this document. Any information provided in this document is provided only for reference purposes. It is the sole responsibility of the user of this document to determine whether the Product is suitable and fit for its applications and products planned, and properly design, program, and test the functionality and safety of its applications and products planned using the Product. Unless otherwise expressly specified in the datasheet of the Product, the Product is designed, developed, and/or manufactured for ordinary business, industrial, personal, and/or household applications only, and the Product is not designed or intended for use in (i) safety critical applications such as weapons systems, nuclear facilities, atomic energy controller, combustion controller, aeronautic or aerospace applications, traffic signal instruments, pollution control or hazardous substance management; (ii) life-support systems, other medical equipment or systems (including life support equipment and surgical implants); (iii) automotive applications or environments, including but not limited to applications for active and passive safety of automobiles (regardless of front market or aftermarket), for example, EPS, braking, ADAS (camera/fusion), EMS, TCU, BMS, BSG, TPMS, Airbag, Suspension, DMS, ICMS, Domain, ESC, DCDC, e-clutch, advanced-lighting, etc.. Automobile herein means a vehicle propelled by a self-contained motor, engine or the like, such as, without limitation, cars, trucks, motorcycles, electric cars, and other transportation devices; and/or (iv) other uses where the failure of the device or the Product can reasonably be expected to result in personal injury, death, or severe property or environmental damage (collectively "Unintended Uses"). Customers shall take any and all actions to ensure the Product meets the applicable laws and regulations. The Company is not liable for, in whole or in part, and customers shall hereby release the Company as well as its suppliers and/or distributors from, any claim, damage, or other liability arising from or related to all Unintended Uses of the Product. Customers shall indemnify and hold the Company, and its officers, employees, subsidiaries, affiliates as well as its suppliers and/or distributors harmless from and against all claims, costs, damages, and other liabilities, including claims for personal injury or death, arising from or related to any Unintended Uses of the Product.

Information in this document is provided solely in connection with the Product. The Company reserves the right to make changes, corrections, modifications or improvements to this document and the Product described herein at any time without notice. The Company shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2023 GigaDevice – All rights reserved