

用于平板数字 X 射线探测器的 256 通道模拟前端

查询样品: **AFE0256**

特性

- **256 个通道**
- 片上, **14 位模数转换器 (ADC)**
- 高性能:
 - 噪声: **758 electronRMS (eRMS), 1.2pC** 范围内的 **28pF** 传感器电容器
 - 积分非线性: 内部 **14 位 ADC** 的 **±1.25** 最低有效位 (**LSB**)
 - 最小扫描时间:
 - 正常模式: **37.9µs**, 内部 **ADC**
 - **2x** 双像素模式: **26µs**, 内部 **ADC**
- 集成:
 - **8 个** 可选、满量程范围:
 - **0.15pC** (最小值) 至 **9.6pC** (最大值)
 - 内置相关双采样器
 - 针对更快数据吞吐量的 **2x** 双像素模式:
 - 两个相邻通道的平均充电
 - 管道式积分和读取:
 - 积分期间允许数据读取
- 灵活性:
 - 电子和空穴积分
 - 为外部高分辨率 **ADC** 提供的模拟输出
- 低功耗:
 - 具有 **ADC** 时, 每通道 **2.9mW**
 - 无 **ADC** 时, 每通道 **2.3mW**
 - 打盹模式时, 每通道 **0.1mW**
 - 总断电特性
- 适合于带载封装 (**TCP**) 或覆晶薄膜封装 (**COF**) 的 **22m x 5mm** 凸出式金属接点芯片

应用范围

- 平板 X 射线检测器

说明

AFE0256 是一款 256 个通道模拟前端 (AFE), 此器件被设计成满足基于平板检测器 (FPD) 的数字 X 射线系统的要求。此器件包括 256 个积分器, 一个用于满量程充电电平检测的可编程增益放大器 (PGA), 一个具有双组的相关双采样器 (CDS), 256:4 模拟复用器和四个差分输出驱动器。

此器件还特有四个板载 14 位逐次逼近寄存器 (SAR) 模数转换器 (ADC)。ADC 提供格式为 SPI™ 的串行数据。

硬件可选积分极性可实现正或负充电荷积分, 并且在系统设计中提供更多的灵活性。此打盹特性大大节省了能耗, 并且特别适合于电池供电类系统。

AFE0256 采用具有已知良好凸出式金属接点芯片的 22mm x 5mm 单格式封装。



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Tray, Top Side

Single Gold-Bump Unit, Back Side

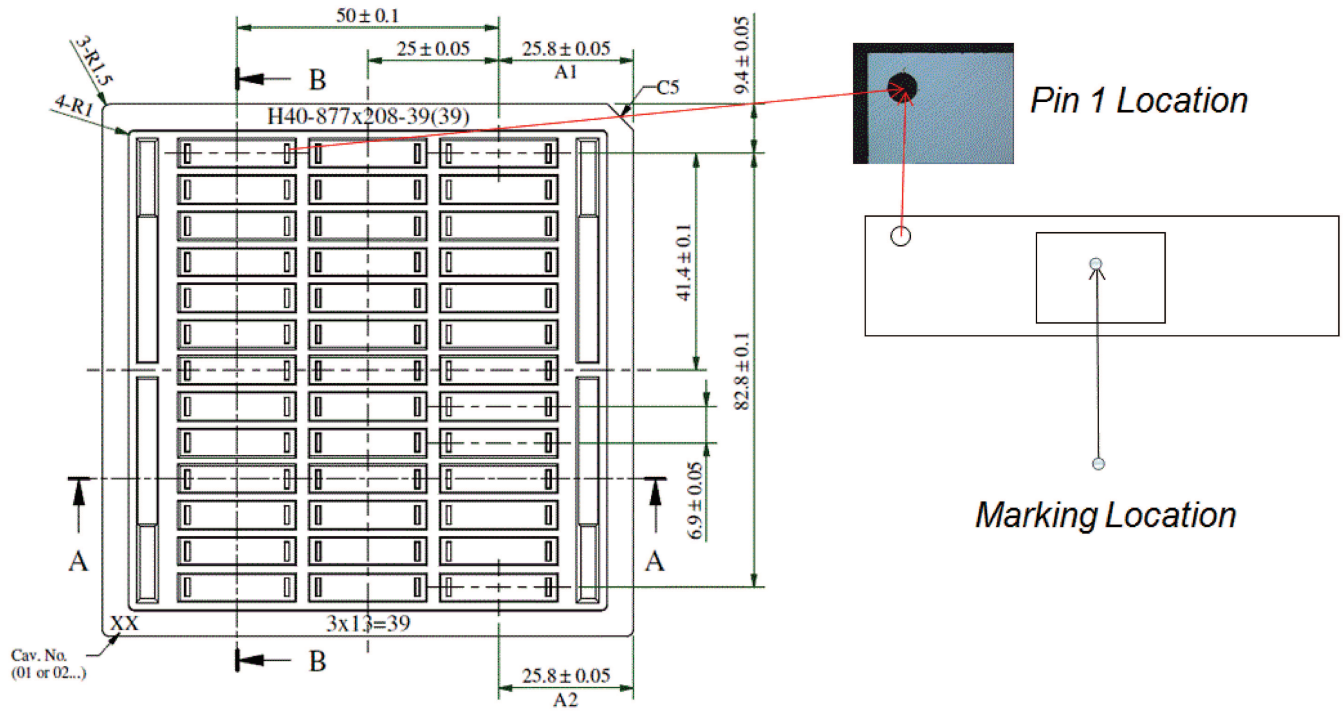


图 1. 托盘信息

修订历史记录

请注意：前一修订版的页码可能与当前版本的页码不同。

Changes from Original (December 2012) to Revision A	Page
• Changed 最后一个特性着重号	1
• 图 1 更新了	2

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
AFE0256GBTD	ACTIVE			0	39	RoHS & Green	AU	Level-1-260C-UNLIM	0 to 85	AFE0256	Samples

(1) The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBSOLETE: TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

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Green: TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "-" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead finish/Ball material - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

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