

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

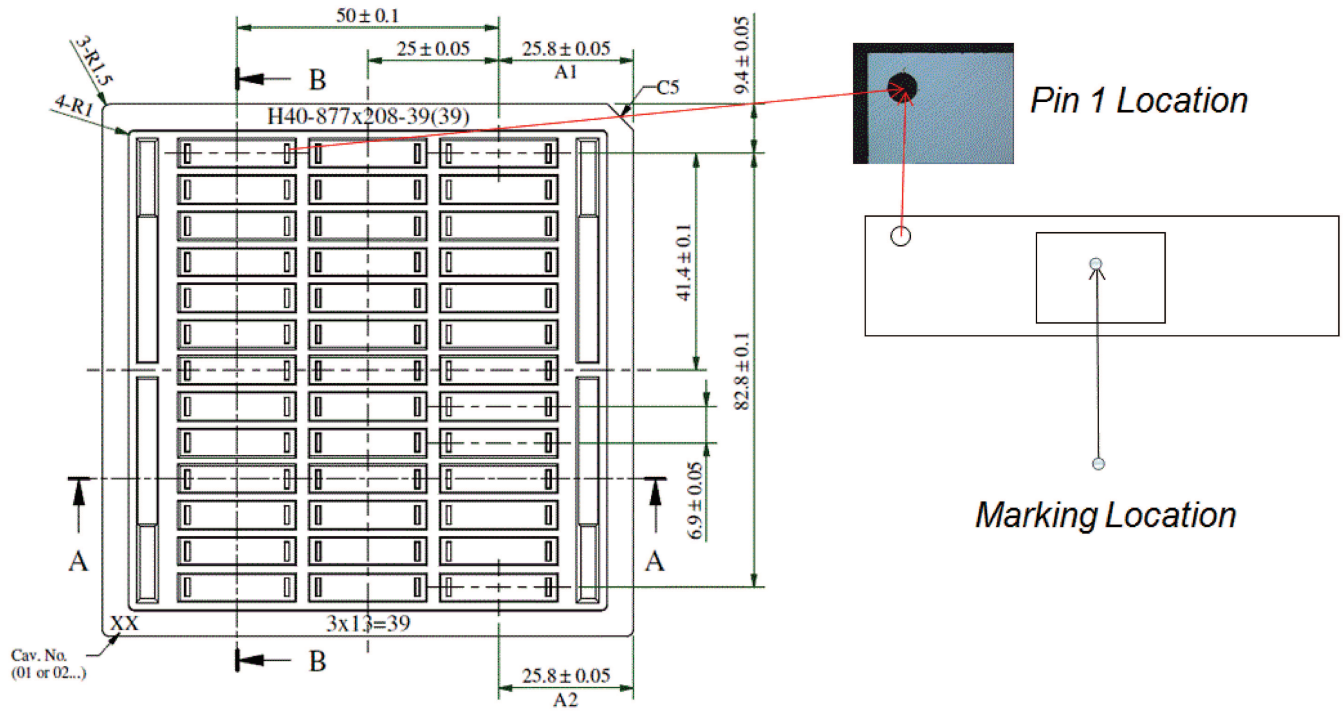


图 1. 托盘信息

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 part number	Status (1)	Material type (2)	Package Pins	Package qty Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
AFE0256GBTD	Active	Production	null (null) 0	39 TUBE	Yes	AU	Level-1-260C-UNLIM	0 to 85	AFE0256
AFE0256GBTD.A	Active	Production	null (null) 0	39 TUBE	Yes	AU	Level-1-260C-UNLIM	0 to 85	AFE0256

(1) **Status:** For more details on status, see our [product life cycle](#).

(2) **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

(4) **Lead finish/Ball material:** Parts 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.

(5) **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

(6) **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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