

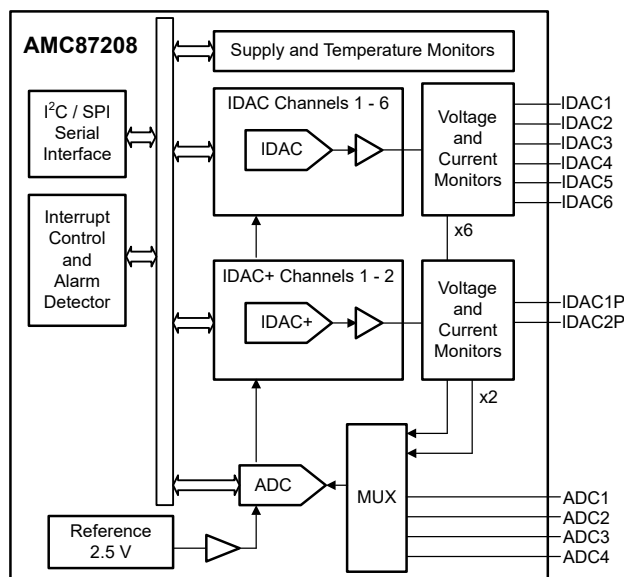
AMC87208 8-Channel, 16-Bit Analog Controller With Current-Output DACs and Multichannel ADC

1 Features

- Six 16-bit current output DACs (IDACs)
 - Programmable full-scale output ranges: 250mA, 150mA, 75mA
 - IDAC1 current sink option: –60mA
- Two 16-bit current output DACs optimized for high current generation (IDAC+)
 - IDAC internal mode with programmable full-scale ranges: 250mA, 150mA, 75mA
 - IDAC+ mode with external FET option for high current generation.
- 12-bit, 1MSPS SAR ADC
 - IDAC voltage and current monitoring
 - IDAC+ voltage and current monitoring
 - Six external inputs
 - Flexible sequencing
- Internal 2.5V reference: 25ppm/°C
- Temperature fault alarms
- Selectable SPI and I²C interfaces: 1.1V to 1.95V operation
- Specified junction temperature: –40°C to +125°C

2 Applications

- [Optical module](#)



Simplified Schematic

3 Description

The AMC87208 is a highly integrated current-output controller optimized for optical networking applications.

The AMC87208 includes six dedicated 16-bit current-output digital-to-analog converters (IDACs), and two 16-bit IDACs that can be configured to control high-output current generation circuits (IDAC+). The AMC87208 also includes a 12-bit, 1MSPS analog-to-digital converter (ADC). This ADC is used for internal and external signal monitoring, and as a temperature alarm monitor. An integrated high-precision internal reference eliminates the need for an external reference in most applications.

The IDAC outputs support full-scale output ranges of 250mA, 150mA, and 75mA, as well as an output range of –60mA (sink mode) supported on IDAC1 only. The IDAC+ outputs in internal current-output mode also support full-scale output ranges of 250mA, 150mA, and 75mA. Additionally, the IDAC+ outputs can be configured to operate with an external FET and sense resistor to simplify the design of very high-current outputs.

The IDAC and IDAC+ outputs operate from independent power supplies with a 275mV minimum headroom for power-dissipation optimization.

Package Information

PART NUMBER	PACKAGE ⁽¹⁾	PACKAGE SIZE ⁽²⁾
AMC87208	YBF (DSBGA, 60)	3.272mm × 3.272mm

- (1) For more information, see [Section 6](#).
- (2) The package size (length × width) is a nominal value and includes pins, where applicable.



4 Device and Documentation Support

4.1 Documentation Support

Note

TI is transitioning to use more inclusive terminology. Some language can be different than what is expected for certain technology areas.

4.2 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on [ti.com](https://www.ti.com). Click on *Notifications* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

4.3 Support Resources

[TI E2E™ support forums](#) are an engineer's go-to source for fast, verified answers and design help — straight from the experts. Search existing answers or ask your own question to get the quick design help you need.

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4.4 Trademarks

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4.5 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

4.6 Glossary

[TI Glossary](#) This glossary lists and explains terms, acronyms, and definitions.

5 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

DATE	REVISION	NOTES
September 2024	*	Initial Release

6 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

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