ANALOG SPOTLIGHT

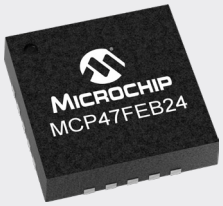
Farnell
AN AVNET COMPANY

MCP47/48FxBx4/8

8/10/12-bit Quad/Octal Digital-to-Analog Converter With I²C Interface

General Information

The MCP47FxBx4/8 devices are a family of buffered voltage output Digital-to-Analog Converters (DAC). The quad and octal options differ only by the number of output channels. The volatile and non-volatile versions have an identical analog circuit structure. There are three voltage reference sources: external VREF pin, the device's VDD or an internal gap voltage source. In the internal band gap voltage reference mode, the gain can be selected between 2 and 4. The device communicates with the host controller using an I²C compatible interface.



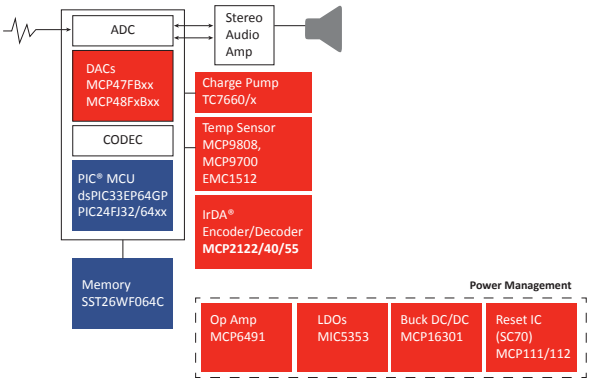
Features

- Operating voltage range:
  - 2.7V to 5.5V – full specifications
  - 1.8V to 2.7V – reduced device specifications
- Output voltage resolutions:
  - 8-bit: MCP47FXB0X (256 steps)
  - 10-bit: MCP47FXB1X (1024 steps)
  - 12-bit: MCP47FXB2X (4096 steps)
- Nonvolatile memory (EEPROM) option:
  - User-programmed Power-on Reset (POR) Brown-out Reset (BOR) output setting and device configuration bits recall
  - Auto recall of saved DAC register setting
  - Auto recall of saved device configuration (voltage reference, gain, power-down)
- Low power consumption:
  - Normal operation: < 1 mA (Quad), 1.8 mA (Octal) and device configuration bits recall
  - Power-down operation: 680 nA typical
  - EEPROM write cycle: 2.7 mA maximum
- Package types:
  - 20-lead TSSOP
  - 20-lead 5 x 5 mm VQFN
- • Extended Temperature Range: -40ºC to +125C

Applications

- Motor control
- PC peripherals
- Set point or offset trimming
- Sensor calibration
- Data acquisition systems
- Low-power portable instrumentation

Wireless Headset Using The DAC



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