



Analog Spotlight

MCP39F511N Single-Phase, Dual Input Power-Monitoring IC

General Information

The MCP39F511N is a highly integrated, dual-channel single-phase power-monitoring IC designed for real time measurement of power for dual socket wall outlets, power strips, AC/DC power supplies and power distribution applications. It includes three ADCs, one voltage and two current load measurements, a 16-bit calculation engine, EEPROM and a flexible 2-wire interface. An integrated low drift voltage reference in addition to the 94.5dB of SINAD performance on each current measurement channel allows for better than 0.5% accurate designs across 4000:1 dynamic range.

Features

- Power-monitoring of two loads
- Capable of 0.5% error across 4000:1 dynamic range
- Built in calculations:
 - Active, reactive, apparent power
 - Active and reactive energy accumulation
 - True RMS current, RMS voltage
 - Line frequency, power factor
- Dedicated Zero Crossing Detection (ZCD) pin
- Dedicated PWM output pin
- Automatic event pin control through fast voltage surge detection
- Fast calibration routines
- 2-wire UART: selectable baud rate up to 115.2 kbps
- 512 bytes user-accessible EEPROM through page read/write commands
- Low drift internal voltage reference: 10 ppm/°C typical
- 28 lead 5x5 QFN package
- Extended temperature range: -40°C to +125°C

Applications:

- Wall socket (dual plug) power-monitoring
- power-monitoring for home automation
- Industrial lighting power-monitoring
- Real-time measurement of input power for AC/DC supplies
- Intelligent power distribution units
- Power-monitoring for the IoT environment

Evaluation Boards:

- MCP39F511N Power Monitor Demonstration Board (ADM00706)



Similar Power-Monitoring Products

MCP39F501, MCP39F511, MCP39F521



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