

MCP39F511A AC/DC Dual-Mode Power-Monitoring IC

General Information

The MCP39F511A device is a highly-integrated, complete single-phase power-monitoring IC designed for real-time measurement of input power for AC or DC power supplies, making it suitable for a wide range of consumer and industrial applications. It includes dual-channel Delta-Sigma ADCs, a 16-bit calculation engine, EEPROM and a flexible 2-wire interface. Separate AC and DC calibration registers are provided, to ensure high-accuracy measurements in both modes. An integrated low-drift voltage reference with 7 ppm/°C in addition to 94.5 dB of SINAD performance on each measurement channel allows for better than 0.1% accurate designs across a 4000:1 dynamic range.



Features

- Real-time measurement of input power for AC or DC supplies
- AC/DC dual-mode power monitoring accuracy capable of 0.1%
- Automatic sensing and switching between AC and DC modes
- Built-in calculations on fast 16-bit processing core
- 512 Bytes user-accessible EEPROM through page read/write commands
- Low-drift internal voltage reference, 7 ppm/°C typical
- 28-lead 5 × 5 QFN package extended temperature range -40°C to +125°

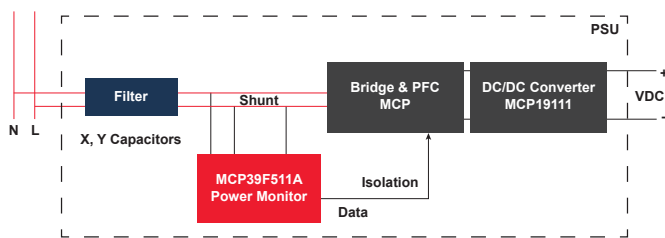
Applications

- Power supplies for servers, networking and storage equipment
- Home monitoring IoT devices like smart plugs and appliances
- Uninterruptible power supplies
- Industrial power meters and power quality monitoring
- Commercial lighting, street lighting and LED lighting applications

Benefits

- Built-in calculations allow the designer to easily add high performance power monitoring capability to their applications which reduces time to market
- Fast calibration routines and simplified command protocol reduces design risk

Measuring Power Inside an AC/DC Power Supply



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