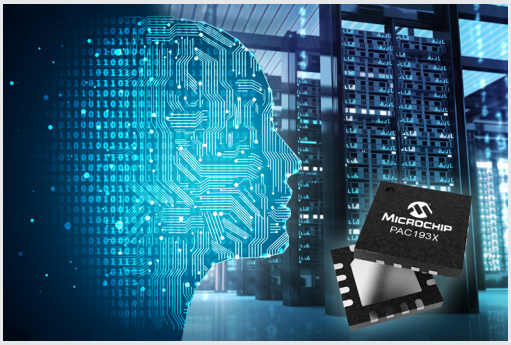
DC Power/Energy Measurement for Multiple Voltage Rails

PAC1932/3/4 DC Power Monitors with Accumulation

Power Needs to Be Measured Before it Can Be Managed

Actively measuring DC power is proving to be a key advantage in saving overall system power. By understanding the power consumption differences between light system loads and heavy system loads, a system design can configure functional blocks to lower power states and overall system power.

Microchip's PAC1932/3/4 are multichannel power sensors with a wide dynamic measurement range. This makes it possible to measure a 1V microprocessor voltage on one channel and a 20V battery voltage simultaneously on a different channel.



Key Benefits

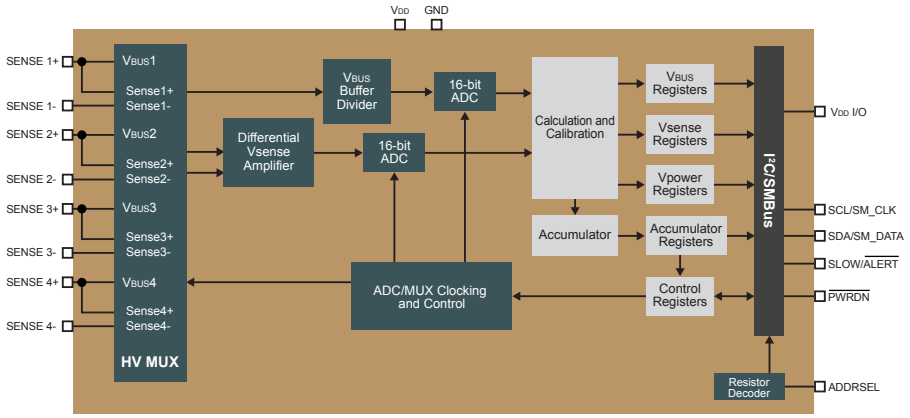
- 1% power measurement accuracy from less than 1 mA to over 10A
- 17 minutes of power accumulation at 1024 sps; greater than 36 hours at 8 sps
- Bidirectional current measurement for battery charging and discharging applications including USB-C at 20V
- 16 µA of active current at 8 sps

Applications

- Embedded computing
- Networking
- Low voltage, high power- FPGA, AI
- Electric and hybrid vehicle
- Cloud, web and Linux Servers
- Industrial
- Notebook, workstation and tablet computing
- Telecommunications
- Linux applications
- Cell phone

Features

- 16-bit resolution for current and bus voltage
- On-chip power calculation and accumulation
- 8× average for current and voltage
- Low input current allows easy routing from the sense resistor
- Auto calibration of offset and gain errors
- 0–32V common-mode voltage
- 1.62–5.5V I²C/SMBus I/O for digital
- No input filters required
- 2.7–5.5V supply operation
- 2.225 × 2.17 mm WLCSP
- 4 × 4 × 0.5 mm QFN



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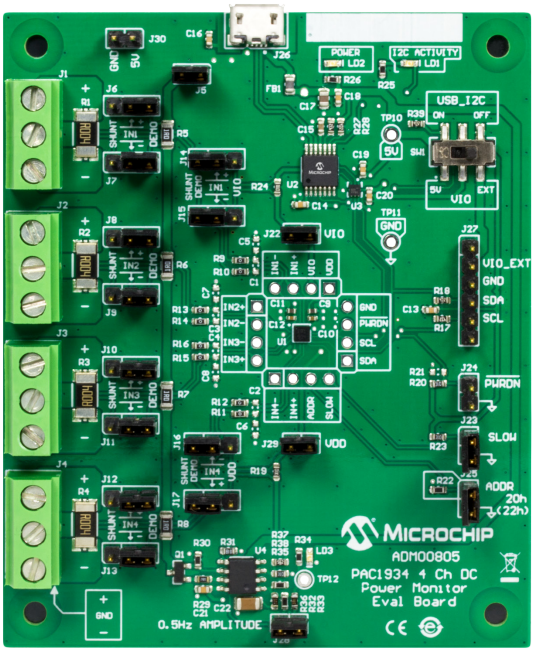
Reference Materials

- PAC1932/3/4 DC power/energy monitor data sheet
- Application Note
  - Integration Notes for Microsoft® Windows® 10 driver support
- Software
  - PAC1934x Demo Application
  - PAC193x Windows 10 Driver
  - PAC193x Energy Meter Interface Utility
  - PAC1934 IIO Class Linux Driver
  - PAC193x MCC Library
  - PAC1934 Python Application
- User Guides
  - PAC1934 Evaluation Board Users Guide
  - PAC193x Microsoft Windows 10 Driver User's Guide
- Evaluation Board (ADM00805)
  - On-board sources for functional display
  - Terminals for external connections
  - BOM, Gerber files, schematics



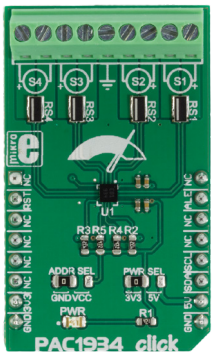
Third-Party Development Tools

PAC1934 Click

The PAC1934 click is a compact development kit with the mikroBUS™ for click board™ connectivity. You can use it to quickly connect up to 4 voltage rails for voltage, current and power measurement. The board will work with a 3.3 or a 5V supply. It allows easy programing with MPLAB X IDE over I^2C or with a MikroElektronika development board. The PAC1934 click is compatible with 8-bit, 16-bit and PIC32MM Microchip Curiosity boards.

Available from www.microchipDirect.com

Available from MikroElektronika: MIKROE-2735



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