

DESCRIPTION

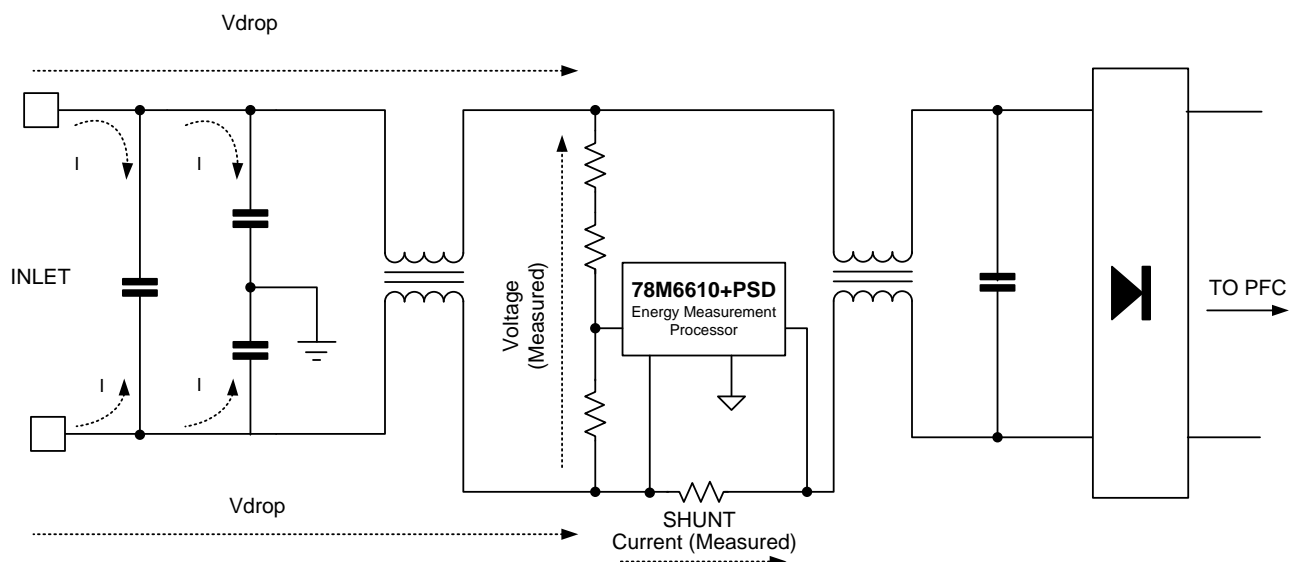
The 78M6610+PSD is an energy measurement processor (EMP) designed specifically for real-time monitoring at the input of AC/DC or DC/DC power converters. The proven solution requires only a few external components and significantly minimizes the calibration costs needed to achieve precision accuracy. The device is available in either a 24-pin TQFN or 16-pin TSSOP package for optimal space savings.

The 78M6610+PSD provides three analog inputs for interfacing to voltage, current, and an optional temperature sensor. Signals from the sensors are fed to the analog front-end. An embedded 24-bit energy measurement processor (EMP) with PSD firmware performs all the necessary computation, compensation, and data formatting for accurate, real-time reporting to the host.

FEATURES

- High resolution delta-sigma ADC with three analog (sensor) inputs for monitoring inlet voltage, current, and temperature
- Precision internal voltage and timing references minimize external components
- SPI, I2C, or UART interface options with configurable I/O pins for alarm signaling, address pins, or user control
- 24-bit energy measurement processor (EMP) with integrated firmware and flash memory provides the user with:
 - Calculations for RMS current and voltage on AC or DC inputs.
 - Real, reactive and apparent power
 - Various Power Quality measurements
 - Compensation for ambient temperature, sensor tolerances, offsets, and EMI filter components
 - Real-time data accumulation based on an integer number of AC cycles
 - Quick calibration routines for manufacturability

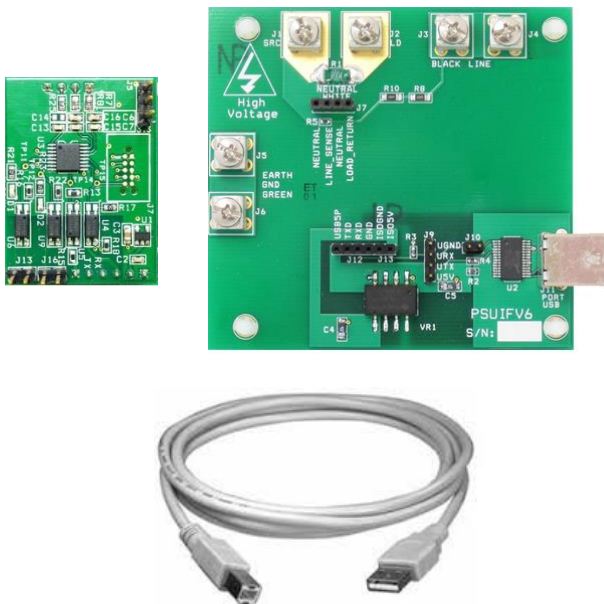
APPLICATION DIAGRAM



EVALUATION KIT

The EMP16-1-PSD evaluation kit is a design example of a modular daughter card for integration into PSUs with inlet power monitoring. The 78M6610 on the daughter card is loaded with PSD firmware and calibrated before shipping. A Windows based GUI is available for simplified evaluation of the solution. Included with the kit are:

- 78M6610 Daughter Card
- Sensor (and Host) Adaptor Board
- USB Cable



DESIGN RESOURCES

- 78M6610+PSD Data Sheet
- EV-EMP16-1 Hardware User Manual
- Application Note: In system calibration
- Application Note: SSI (UART) Interface
- Application Note: HW Design Guidelines

SUPPORT & AVAILABILITY

For more information on energy measurement solutions from Silergy, please contact support.em@silergy.com

ORDERING INFORMATION

| Ordering Number | Description |
|------------------|--|
| EV-EMP16-1-PSD | EMP16 evaluation kit with 78M6610+PSD pre-calibrated |
| 78M6610+PSD/CKD | 78M6610 (16-pin TSSOP) with PSD firmware; shipped in tubes |
| 78M6610+PSD/CKDT | 78M6610 (16-pin TSSOP) with PSD firmware; shipped in reels |
| 78M6610+PSD/BKD | 78M6610 (24-pin TQFN) with PSD firmware; shipped in tubes |
| 78M6610+PSD/BKDT | 78M6610 (24-pin TQFN) with PSD firmware; shipped in reels |