

FEATURES

- Digital dual-phase interleaved PFC controller with inherent current matching
- High flexibility digital PWM
- PWM frequency ranges from 20 kHz to 200 kHz
 - Switching frequency spread spectrum for improved EMI
 - High performance control loop
 - 25 MHz sigma-delta ADC for line voltage and current sense, 12.5 MHz sigma-delta ADC for output voltage
 - Enhanced dynamic loop response
 - Input voltage feedforward
 - Support HVDC input
 - Multi-mode operations
 - Continuous Conduction Mode (CCM) in heavy load Conditions
 - Discontinuous Conduction Mode (DCM) in light load conditions
 - Burst mode in the zero load conditions
 - Advanced control functions
 - True RMS power metering
 - Inrush current control with programming relay delay
 - Two channels X-cap discharge during shut down
 - Dynamic current balancing between two phases
 - Extensive fault protections
 - Fast over-voltage protection
 - Bulk under-voltage protection and over-voltage protection
 - External NTC thermal protection
 - Cycle-by-cycle current limit
 - Average switching current protection
 - Built-in 1 kBit MTP to store custom configurations
- Low power consumption
- I²C and UART interfaces
- Programming via easy-to-use Graphical User Interface (GUI)
- Available in QFN-24L packages
- 40°C to 125°C operating temperature

APPLICATIONS

- Ultra-High Density Power Supplies
- LED Lighting
- Industrial Power Supplies
- Server/Telecom
- EV/E-Bike Charger
- Supercomputing
- Variable-Frequency Drivers (VFD)

GENERAL DESCRIPTION

The HP1011 is a highly flexible digital Power Factor Correction (PFC) controller designed to drive the dual phase interleaved PFC stage.

A rectified diode bridge and dual-phase interleaved boost converter each has a fast-switching leg driven at the PWM switching frequency and a fast-recovery diode make up the dual-phase interleaved PFC. HP1011 supports shut-down one PWM channel under light load condition which can achieve high efficiency at light load.

The HP1011 offers RMS value of input voltage, current, and power. Through the I²C and UART interfaces, this information can be communicated to a microcontroller.

The HP1011 operates from a single 3.3 V supply. The device is available in 4 mm x 4 mm QFN-24L package specified over an ambient temperature range of -40°C to +125°C.

Device Information

PART NUMBER	PACKAGE	BODY SIZE
HP1011	QFN-24L	4 mm x 4 mm