

## Active PFC Controller with Critical Conduction Mode

### General Description

The RT7300 is an active Power Factor Correction (PFC) controller with critical conduction mode (CRM) operation that is designed to meet line current harmonic regulations for the applications of AC/DC adapters, electronic ballasts and medium off-line power converters (<300W). The CRM and Feed-Forward schemes provide near unity power factor across a wide range of input voltages and output powers.

The totem-pole gate driver with 600mA sourcing current and 800mA sinking current provides powerful driving capability for power MOSFET to improve conversion efficiency. The RT7300 features an extra low start-up current ( $\leq 20\mu\text{A}$ ) and supports a disable function to reduce power consumption in standby mode, which makes it easy to comply with energy saving regulations such as Blue Angel, Energy Star and Energy 2000.

This controller integrates comprehensive safety protection functions for robust designs including input under voltage lockout, output over voltage protection, under voltage protection and cycle-by-cycle current limit.

The RT7300 is a cost-effective solution for PFC power converter with minimum external components. It is available in the SOP-8 package.

### Features

- Critical Conduction Mode (CRM) Operation
- Constant On-Time Control (Voltage Mode)
- Near Unity Power Factor
- Ultra Low Start-up Current ( $<20\mu\text{A}$ )
- Input Voltage Feed-Forward Compensation
- Wide Supply Voltage Range from 12V to 25V
- Totem Pole Gate Driver with 600mA/–800mA
- Maximum Frequency Clamping (120kHz)
- DCM THD Optimization
- Fast Dynamic Response
- Light Load Burst Mode Operation
- Brown-in/Brown-out Detection
- Disable Function
- Maximum/Minimum On-Time Limit
- Cycle-by-Cycle Current Limit
- Output Over Voltage Protection (OVP)
- Output Under Voltage Protection (UVP)
- Under Voltage Lockout (UVLO)
- RoHS Compliant and Halogen Free

### Simplified Application Circuit

