Product Overview

FAN4801S: Power Factor Controller (PFC) CCM + PWM Controller, with Surge Capability Enhancement

For complete documentation, see the data sheet.

The highly integrated FAN4800AS/CS/01S/02S parts are specially designed for power supplies that consist of boost PFC and PWM. They require very few external components to achieve versatile protections / compensation. They are available in 16-pin DIP and SOP packages.
The PWM can be used in either current or voltage mode. In voltage mode, feed-forward from the PFC output bus can reduce the secondary output ripple.
Compared with older productions, ML4800 and FAN4800, FAN4800AS/CS/01S/02S have lower operation current that saves power consumption in external devices. FAN4800AS/CS/01S/02S have accurate 49.9% maximum duty of PWM that makes the hold-up time longer. Brownout protection and PFC soft-start functions available in this series are not available in ML4800 and FAN4800.

To evaluate FAN4800AS/CS/01S/02S for replacing existing FAN4800 and ML4800 boards, five things must be completed before the fine-tuning procedure:
1. Change R_{AC} resister from the old value to a higher resister: between 6 MΩ to 8 MΩ .
2. Change RT/CT pin from the existing values to R_T=6.8 kΩ and CT=1000 pF to have f_{PFC}=64 kHz and f_{PWM}=64 kHz.
3. The VRMS pin needs to be 1.224 V at V_{IN}=85 V_{AC} for universal input application from line input from 85 V_{AC} to 270 V_{AC}.
4. At full load, the average V_{VEA} needs to be ~4.5 V and the ripple of V_{VEA} needs to be less than 400 mV.
5. For the Soft-Start pin, the soft-start current has been reduced to half the FAN4800 capacitor.

There are two differences from FAN4800A/C/01/02 to FAN4800AS/CS/01S/02S:
1. Under-voltage protection debounce time is extended to one second.
2. PWM gate clamp voltage is raised to 19 V.

Features

- Pin-to-Pin Compatible with ML4800 and FAN4800 and CM6800 and CM6800A
- PWM Configurable for Current Mode or Feedforward Voltage-Mode Operation
- Internally Synchronized Leading-Edge PFC and Trailing-Edge PWM in One IC
- Low Operating Current
- Innovative Switching-Charge Multiplier Divider
- Average-Current Mode for Input-Current Shaping
- PFC Over-Voltage and Under-Voltage Protections
- PFC Feedback Open-Loop Protection
- Cycle-by-Cycle Current Limiting for PFC/PWM
- Power-on Sequence Control and Soft-Start

  For more features, see the data sheet

Applications

- Desktop PC
- LCD TV
- LCD Monitor
- Distribution

For more information please contact your local sales support at www.onsemi.com.

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