



PFE850-12-054xA

850 W AC-DC Front-End Power Supply

The PFE850-12-054xA is a 850 Watt, AC to DC power-factor-corrected (PFC) power supply that converts standard AC mains power into a main output of 12 VDC for powering intermediate bus architectures (IBA) in high performance and reliability servers, routers, and network switches.

The PFE850-12-054xA meets international safety standards and displays the CE-Mark for the European Low Voltage Directive (LVD).



Key Features & Benefits

- Best-in-class, 80 PLUS certified “Platinum” efficiency
- Wide input voltage range: 90-264 VAC
- AC input with power factor correction
- Always-On 16.5 W programmable standby output (3.3/5 V)
- Hot-plug capable
- Parallel operation with active digital current sharing
- Full digital controls for improved performance
- High density design: 19.8 W/in³
- Small form factor: 54.5 x 40.0 x 321.5 mm
- I2C communication interface for control, programming and monitoring with PSMI and PMBus® protocol
- Overtemperature, output overvoltage and overcurrent protection
- 256 Bytes of EEPROM for user information
- 2 Status LEDs: AC OK and DC OK with fault signaling

Applications

- High Performance Servers
- Routers
- Switches

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1. ORDERING INFORMATION

PFE	850	-	12	-	054	x	A
Product Family	Power Level	Dash	V1 Output	Dash	Width	Airflow	Input
PFE Front-Ends	850 W		12 V		54 mm	N: Normal R: Reversed	A: AC

2. OVERVIEW

The PFE850-12-054xA AC-DC power supply is a fully DSP controlled, highly efficient front-end. It incorporates resonance soft-switching technology and interleaved power trains to reduce component stresses, providing increased system reliability and very high efficiency. With a wide input operating voltage range and minimal linear derating of output power with input voltage and temperature, the PFE850-12-054xA maximizes power availability in demanding server, switch, and router applications. The front-end is fan cooled and ideally suited for server integration with a matching airflow path.

The PFC stage is digitally controlled using a state-of-the-art digital signal processing algorithm to guarantee best efficiency and unity power factor over a wide operating range.

The DC-DC stage uses soft switching resonant techniques in conjunction with synchronous rectification. An active OR-ing device on the output ensures no reverse load current and renders the supply ideally suited for operation in redundant power systems.

The always on standby output with selectable voltage level (3.3/5 V) provides power to external power distribution and management controllers. Its protection with an active OR-ing device provides for maximum reliability.

Status information is provided with front-panel LEDs. In addition, the power supply can be controlled and the fan speed set via the I2C bus. It allows full monitoring of the supply, including input and output voltage, current, power, and inside temperatures.

Cooling is managed by a fan controlled by the DSP controller. The fan speed is adjusted automatically depending on the actual power demand and supply temperature and can be overridden through the I²C bus.

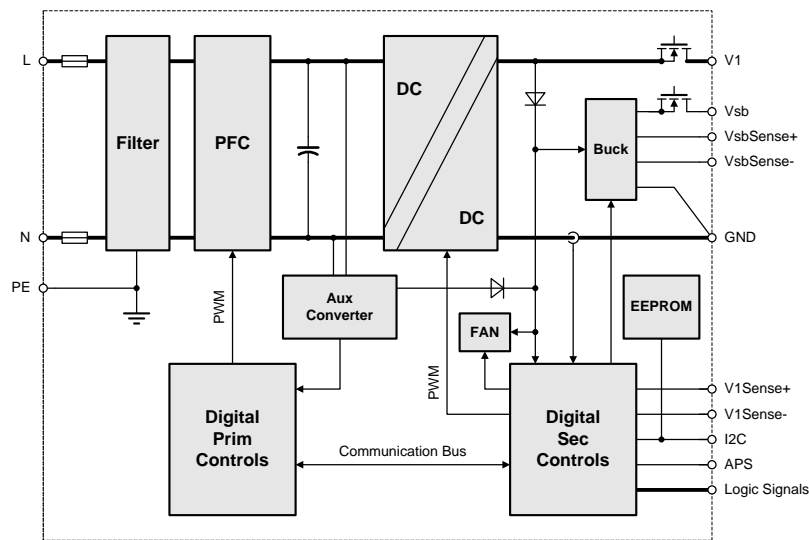


Figure 1. PFE850-12-054xA Block Diagram

3. ABSOLUTE MAXIMUM RATINGS

Stresses in excess of the absolute maximum ratings may cause performance degradation, adversely affect long-term reliability, and cause permanent damage to the supply.

PARAMETER	CONDITIONS / DESCRIPTION	MIN	MAX	UNITS
<i>V_i maxc</i>	Maximum Input	Continuous	264	VAC