

Power Supplies

12V and 48V 504W rated models added to conduction cooled AC-DC power module series with PMBus™ communication

March 2022

TDK Corporation (TSE 6762) announces the introduction of 12V and 48V output models to the conduction cooled TDK-Lambda brand PFH500F series of AC-DC power modules. The power supplies are rated at 504W, feature a compact 4" x 2.4" footprint with programming and communication through a PMBus™ interface. These power supplies are ideal for a variety of applications including COTS (Commercial-Off-The-Shelf) applications, power amplifiers, LED displays and test equipment.

The PFH500F series utilizes GaN semiconductors, bridgeless power factor correction, synchronous rectification and digital control, enabling efficiencies of up to 92%. Opto-couplers have been replaced by digital isolators for long term reliability and stability.

Accepting an 85 to 265Vac input, the modules deliver 12V at 42A or 48V at 10.5A and can be adjusted from 9.6 to 14.4V or 38.4 to 52.8V using the trim pin or PMBus™ interface. The droop mode current share option enables modules to be connected in parallel for additional power. Baseplate cooling allows operation at temperatures ranging from -40 to +100°C. The metal enclosure measures 4 x 2.4 x 0.53" (101.6 x 61.0 x 13.3mm) and is encapsulated for MIL-STD-810G shock and vibration.

Features include a 12V 200mA standby voltage, remote on/off, pre-biasing start-up, droop mode current share, a Power Good signal, output trim pin and a PMBus™ interface. The PMBus™ can be used to program (read-write) the output voltage and fault management functions and monitor the unit's operating status. The PFH500F series is fully protected against over voltage, under voltage, over current and over temperature conditions.

The series has been certified to the IEC/UL/CSA/EN 62368-1 safety standards and carries the CE and UKCA marks for the Low Voltage and RoHS Directives. Input to ground isolation is 2,500Vac, input to output 3,000Vac and output to case 1,500Vdc.

More information on the PFH500F models, including distributor inventory and evaluation boards, can be obtained from the TDK-Lambda Americas website at <https://www.us.lambda.tdk.com>.

Main applications

- COTS (Commercial-Off-The-Shelf), power amplifiers, LED displays and test equipment

Main features and benefits

- 4" x 2.4" foot-print
- High Efficiency – up to 92%
- PMBus™ interface
- Parallel capability (droop mode)

Key data

Model		PFH500F-12	PFH500F-48
Input voltage range	Vac	85 to 265	
Output voltage	Vdc	12	48
Maximum output power	W	504	
Efficiency	%	Up to 92	
Communications	-	PMBus™ (read/write)	
Safety Certifications	-	IEC/UL/CSA/EN 62368-1, CE and UKCA Mark	
Size (W x H x L)	mm	101.6 x 61.0 x 13.3	

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately “Attracting Tomorrow.” It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK’s comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2021, TDK posted total sales of USD 13.3 billion and employed about 129,000 people worldwide.

About TDK-Lambda Corporation

TDK-Lambda Corporation is a trusted, innovative leader and global supplier of highly reliable power conversion products for industrial and medical equipment worldwide.

TDK-Lambda Corporation is aligned for fast responses to any customer need with R&D, manufacturing, sales and service locations in five key geographic regions, namely Japan, EMEA, Americas, China and ASEAN.

For more details, please pay a visit to: www.jp.lambda.tdk.com/en/

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