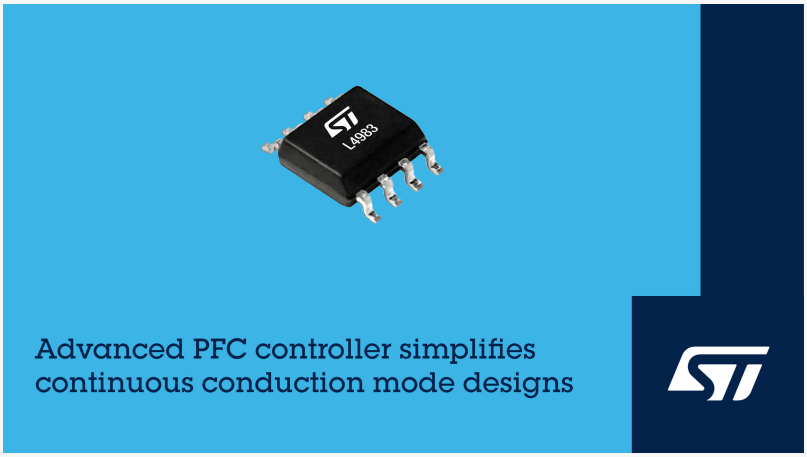
STMicroelectronics’ highly integrated power-factor correction controller simplifies continuous conduction mode designs

With low-power modes and extensive protection, for switched-mode power supplies up to several kW



STMicroelectronics L4983 PFC controller

GENEVA, SWITZERLAND, September 9, 2026 /EINPresswire.com/ -- STMicroelectronics’ L4983 power-factor correction (PFC) controller contains a proprietary multiplier emulator and distortion-optimization circuitry, letting designers build continuous conduction mode (CCM) PFC circuits with very few external passive components.

The L4983 is suitable for power supplies ranging from several hundred Watts to multiple kilowatts and has a totem-pole output with 7A-sink/3A-source capability. Typical applications include industrial and medical power supplies, high-power luminaires, servers, PCs, and home electronics that must meet EN 61000-3-2 and similar specifications worldwide, such as the Japanese JEIDA-MITI standard.

The device has three power-saving modes that help equipment meet efficiency guidelines including US Energy Star, the EU Ecodesign Directive, and European Code of Conduct for power adapters. Among these, burst mode automatically stops switching activity during light or zero load conditions, resuming quickly without soft-restart as the load increases. Additionally, the device has a pin-controlled idle mode that suspends switching and turns off the internal error amplifier, and a disable mode that stops the device and resumes via soft-start.

Extensive protection features help withstand harsh operating conditions and safeguard system reliability. The L4983 has overvoltage protection to stabilize the output during transients, cycle-by-cycle overcurrent protection using an internal comparator, and inductor-saturation detection to prevent abnormal currents and surges. Line feedforward stabilizes the output power as the AC input fluctuates, and the controller protects against feedback loop failures by verifying voltage-feedback and current-sense signals at startup. Soft-start is also integrated, which actively

limits inrush currents to maintain output-voltage regulation.

Also available, the EVL4983-350W demonstration board accelerates development of switched-mode power supplies using the L4983. The board implements a 350W PFC pre-regulator with universal input-voltage range and provides a regulated 400Vdc output, with low THD (Total Harmonic Distortion) across the load range and efficiency of 97.4%.

Two L4983 variants are available, which enhances flexibility for designers. The L4983A operates at a switching frequency of 65kHz and the L4983B operates at 130kHz. Both types are in production now, in the compact SO-8 surface-mount package, priced from $0.80 for orders of 1000 pieces.

For more information, visit https://www.st.com/L4983

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