

Flyback Switcher ICs Bring High Efficiency To Three-Phase 480-V Industrial Applications

[Power Integrations](#) has extended its LinkSwitch line of offline switcher ICs by introducing a new family of chips incorporating 900-V (or 725-V) power MOSFETs. Targeting high-efficiency isolated and non-isolated flyback power supplies up to 8 W, the LinkSwitch-XT2 offline switcher ICs are suitable for three-phase industrial power supplies to 480 Vac and high-quality consumer products destined for regions with unstable mains grids, tropical regions with frequent lightning strikes or any area where high-energy ring-waves and surges are prevalent (see Fig. 1).

The 900-V versions of the LinkSwitch-XT2 IC family are optimized for high efficiency, enabling designs to easily meet Energy Related Products (ErP) limits. LinkSwitch-XT2 power supplies use less than 30 mW when unloaded and have high conversion efficiency across the load range. This makes the new devices well suited for IoT and home and building automation (HBA) systems which spend substantial time in active standby monitoring radio or networking interfaces.

The ICs feature selectable current limit and fully integrated auto-restart for short-circuit and open-loop protection. The use of frequency jittering greatly reduces EMI and devices easily meet high-voltage creepage and clearance requirements between the DRAIN and all other pins both on the PCB and on the package. Fig. 2 shows a typical application circuit.

Comments senior product marketing manager Silvestro Fimiani: "These switching power ICs enable designers of three-phase utility meters, motors, industrial auxiliary power supplies, appliances and IoT/HBA sensors and actuators to realize a truly 'one-world' power supply that meets the reliability expectations of users everywhere. For example, OEMs addressing the burgeoning market in India for high-quality consumer products suffer a continuous stream of electrically damaged and returned products that must be serviced or replaced. 900-V LinkSwitch-XT2 switcher ICs provide effective and inexpensive protection with a commensurate reduction in operating and product-support costs."

Package options include PDIP-8C, SMD-8C and SO-8C. Samples of the 900-V LinkSwitch-XT2 ICs are available now and priced at \$0.60 in 10,000-piece quantities. Technical support is available from the company's [website](#). For more information, see the LinkSwitch-XT2 [product page](#).



Fig. 1. The LinkSwitch-XT2 offline switcher ICs, which incorporate 900-V power MOSFETs, simplify the design of high-efficiency isolated and non-isolated flyback power supplies up to 8 W, enabling a robust, low-component-count solution. These ICs are suitable for three-phase industrial power supplies to 480 Vac and consumer products destined for regions with unstable mains grids, tropical regions with frequent lightning strikes or areas where high-energy ring-waves and surges are prevalent.

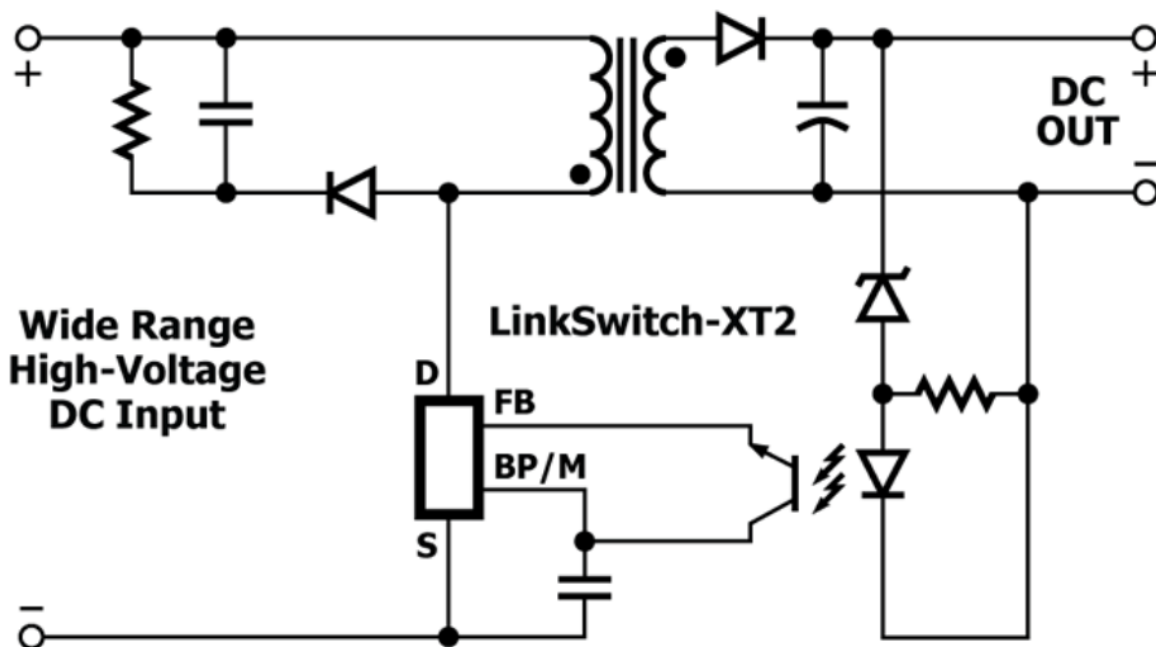


Fig. 2. Typical application circuit for the LinkSwitch-XT2. This monolithic offline switcher IC incorporates a 725-V/900-V power MOSFET, oscillator, simple on/off control scheme, a high-voltage switched current source, frequency jittering, cycle-by-cycle current limit and thermal shutdown circuitry. The start-up and operating power are derived directly from the drain pin, eliminating the need for a bias winding and associated circuitry.