Monolithic High Voltage Power Conversion IC Family

Power Integrations announced the availability of a power monolithic off-line power supply switcher IC family, TOPSwitch&reg-GX. The new family, capable of delivering up to 250 Watts, expands the company's TOPSwitch product line of power conversion ICs. The TOPSwitch topology integrates a high voltage Power MOSFET, PWM control, fault protection, and other control circuitry onto a single CMOS chip. The new TOPSwitch-GX family consists of 14 part types ranging in output power levels from 5 W to 250 W. In addition to all of the TOPSwitch features, this family of devices integrates many built-in and user configurable features that offer engineers flexibility to optimize their power supply designs.
Built-in features include soft-start for minimum overshoot and lower component stresses at start-up, frequency jittering for low EMI, wider duty cycle for smaller input capacitor, zero load regulation capability, very high light load efficiency for low stand-by consumption, and hysteretic thermal shutdown for automatic fault recovery. All critical parameters such as current limit and frequency are trimmed to a high level of accuracy for ease of design and system cost optimization.
Furthermore, the TOPSwitch-GX family offers additional user configurable pins for line-sensing, externally setting the current limit, and for selecting between two switching frequencies (130 kHz and 65 kHz). The line-sensing pin can be used to implement under-voltage detection for glitch free power up/down and over-voltage shutdown for protection against line surges. Line-sensing also provides feed-forward for lower output ripple and maximum duty cycle reduction at higher input voltages. The current limit of the high voltage MOSFET can be accurately reduced through the external current limit pin for optimum efficiency at lowest cost. The same pin can also be used to implement power limiting independent of input line voltage.
The new family also incorporates the company's EcoSmart&reg technology, addressing designs that must meet the need for environmentally friendly power solutions. EcoSmart technology reduces energy consumption, especially in standby and no-load conditions. This is extremely important for systems meeting the increasing demands of worldwide energy efficiency guidelines for environmentally friendly or &quotgreener&quot electronic products. The energy consumption reduction features in TOPSwitch-GX include remote ON/OFF, automatic frequency reduction at light loads, and a half-frequency (65 kHz) option. The unique remote ON/OFF function can shut off power to an end product when it is not in use, effectively &quotun-plugging&quot it until a signal is received to awaken it. These features enable electronic systems to go well beyond the current agency guidelines such as Energy Star&reg in the US.
Applications for the new devices include laptop adapters, cellular phone adapters, LCD monitors, personal computers, set-top boxes, printers, DVD players, uninterruptible power supplies (UPS), video games, internet appliances, as well as customer specific &quotopen frame&quot power supplies. TOPSwitch-GX is supported by a number of design tools including a 48-page databooklet, an application note (AN-29), a Design Accelerator Kit (DAK-11) complete with a 70 W

universal input laptop adapter power supply, and the company's power supply design software program, PI Expert &#153, version 2.5.

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