

# Energy-Efficient Standby Power Supply Reference Designs



Power Integrations has published two new standby power supply reference designs using its recently announced TOPSwitch-JX IC product family. TOPSwitch-JX devices feature multi-mode control, minimizing power wasted in standby and delivering maximum efficiency over a wide range of operating loads. The new reference designs target applications that require more than 90% full-load efficiency to meet such standards as the 80 PLUS® Gold or Silver PC specifications, EuP Lot 6 standby rules, or the new California requirements for TV power usage.

DER-246 is a general-purpose evaluation platform and describes a PC standby power supply based on TOPSwitch-JX TOP265EG that operates from 110 VDC to 400 VDC input and provides >91% efficiency at 12 V, 15 W. DER-247, based on TOPSwitch-JX TOP264EG, describes a supply for a similar application operating from 110 VDC to 400 VDC input and providing >87% efficiency at 5 V, 10 W. For TV and other consumer products, the designs make 20 mW available to the load for just 100 mW of input power.

TOPSwitch-JX is a highly integrated family of 16 power conversion ICs incorporating a 725 V power MOSFET for use in flyback power supplies. The novel TOPSwitch-JX multi-mode control algorithm maximizes power efficiency across the entire load range. High efficiency at full power minimizes power wasted during normal operation and reduces the complexity and expense of thermal management on the system. At low power levels, high efficiency enables adapters with extremely low no-load consumption and maximizes power available to the system in standby mode for applications constrained by standards and regulatory controls.

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