Reference Design for Efficient 200W Power Adapters Used in Game Consoles

ON Semiconductor's seventh GreenPoint reference design is for a 200W power adapter used to power game consoles -- allowing engineers to implement adapters that provide minimized active- and standby mode power consumption. The 200W adapter for game consoles has a dual output voltage, which makes the requirements for minimum active efficiency and maximum standby mode power more challenging to meet. Targeting active-mode energy efficiency of 90 percent at full load, this design achieves standby-mode power consumption of >1W -- which is said to exceed CEC, Energy Star and European Code of Conduct requirements. A typical 200W adapter used to power today's game consoles consumes >3W in standby mode. The enabling device for the GreenPoint 200W reference design is the NCP1562 active clamp PWM voltage mode controller for power supplies requiring high efficiency and power density. Featuring an accurate (±5 percent max.) duty cycle limit, the NCP1562 allows designers to optimize MOSFET selection to enable the best combination of performance and cost. The controller features a soft-stop which prevents the typical oscillations in the forward active-clamp topology and in turn provides a safe, robust design.
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602-244-6600, www.onsemi.com [1]

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