endura
technologies

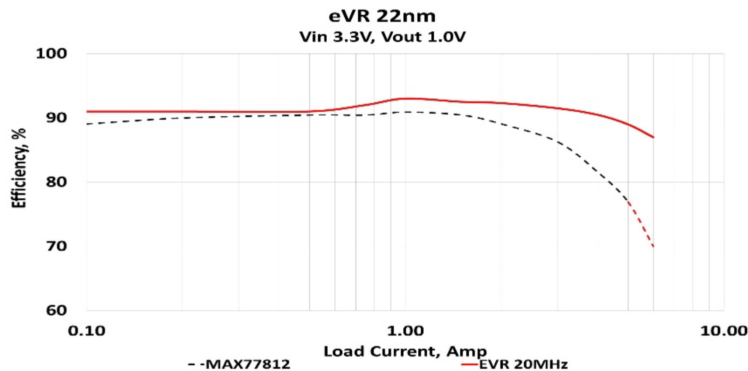
Case Study: Data Center Connectivity
Enhancing optical module throughput

Background

A leading supplier of digital signal processing chips for optical modules engaged Endura to create a derivative of Endura's 2775 PMIC specifically designed to reduce heat dissipation within an optical module. The customer's existing solution is inefficient, causing excess heat dissipation, which may force the optical module's throughput to be dialed down from potential of 1.6 Tb/s or add significant additional system complexity. The existing PMIC solution is the key bottleneck limiting the functionality of an optical module that sells for several thousand dollars. The DSP supplier wanted a 5-8% increase in power efficiency without a significant increase in the surface area of the solution.

Endura Solution

Endura is finalizing design, production, and schematics for a new product, the CHP277x to service the growing needs of the optical datacenter connectivity market. The chip will be produced either in the 55nm or the 22nm processing node. Endura's solution optimizes power delivery for each power rail within the DSP SoC, reducing total wasted power consumption and heat dissipation. The benefits CHP277x is scalable across the full spectrum of load current, but performs exceptionally well at maximum loads, which is critical in high performance data center connectivity. The solution is capable of delivering 50+ Amps of power in a chip that is as small as 8 mm^2 in size.



Benefits

The CHP277x optimized power delivery significantly boosted overall power efficiency leading to a significant decrease in total power consumed and heat dissipated. Additionally, the CHP277x also dramatically reduced the number of passive components needed relative to the existing system, saving the customer board space.