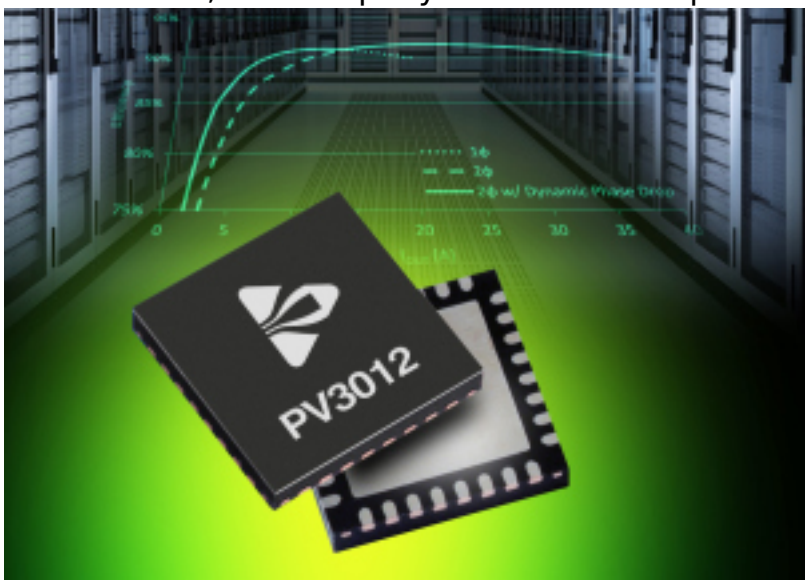
Digital controller provides real-time adaptive loop compensation

ECN Europe

Powervation [1]’s new dual phase digital DC/DC controller, the PV3102, features Auto-Control, the company’s real-time adaptive loop compensation technology.



[2]

Picture: Powervation

Powervation says this technology optimises the trade-off between dynamic performance and system stability on a cycle-by-cycle basis without requiring any noise injection or other drawbacks of part-time measurement techniques. This is a key advantage for designs that drive imprecise or variable loads, and addresses the challenges associated with power supply component parameter drift that occurs over temperature and time.

PV3012 features voltage precision of ±0.5% over line, load, and the full -40°C to 125°C temperature range. The converter’s output can be configured from 0.6 V to 5.5 V using PMBus commands or with an external resistor to access standard and DOSA set-point tables.

Phases may be automatically added or removed as the load varies, maximising efficiency over the load range. Additionally, with Powervation’s Digital Stress Share (DSS) single-wire bus, multiple PV3012 devices can be connected in parallel to securely drive high current multi-phase loads.

PV3012 is a system on chip solution based on a lean DSP/RISC dual-core architecture with a precision data acquisition engine running advanced Auto-Control algorithms in firmware. PV3012 is designed to work with all leading driver and FET solutions to allow the designer maximum flexibility.

Designed to power ASICs, FPGAs, processors, and general POLs for networking, communications, server, storage, and advanced power module applications, the RoHS compliant PV3012 is sampling now in 32-lead QFN packaging.

SOURCE [3]

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http://www.ecnmag.com/blogs/2011/09/digital-controller-provides-real-time-adaptive-loop-compensation

Links:
[1] http://www.powervation.com
[2] http://ecneurope.files.wordpress.com/2011/09/290911-powervation.jpg
[3] http://ecneurope.wordpress.com/2011/09/29/digital-controller-provides-real-time-adaptive-loop-compensation/