PWM Controllers Intended for Consumer and Industrial Applications

ON Semiconductor introduced three new flexible synchronous pulse width modulation (PWM) controller devices – the NCP3020A, NCP3020B and NCP3011. Offering a wide input voltage range, from 4.7V to 28V, these devices enable the flexibility to be used with a variety of input sources in consumer electronic equipment such as set-top-boxes and LCD televisions, as well as industrial and computing applications including printers, scanners and telecom systems.

“ON Semiconductor’s expanding portfolio of synchronous PWM controllers and MOSFETs provide designers with a full system solution to meet their power management challenges,” said John Blake, ON Semiconductor director for Power Switching products. “The new family of wide input voltage range controllers extends our high efficiency solutions to more applications and products while the enhanced features and performance will make it easier for our customers to design advanced power supplies.”

The newest PWM controller devices provide a 1A integrated gate drive and are capable of producing output voltages as low as 0.6V (NCP3020A and NCP3020B) and 0.8V (NCP3011). The NCP3011 also provides a buffered +1.25V reference voltage which can be used as a low dropout (LDO) controller for one or two additional outputs. An internal oscillator sets the operating frequencies of 300kHz (NCP3020A), 600kHz (NCP3020B), and 400kHz (NCP3011). A regulated digital soft-start limits in-rush current.

All three of ON Semiconductor’s new synchronous PWM controllers feature an externally compensated transconductance error amplifier capable of being used

with all ceramic output capacitors or electrolytic capacitors. Also included are an integrated boost diode that helps to reduce overall system size and cost, and an integrated boost drive clamp to regulate the driver supply voltage to 7.6V to allow the use of lower voltage/higher efficiency MOSFETs. An enhanced suite of protection features includes lossless current limit, short circuit protection, output overvoltage protection, output undervoltage protection and input undervoltage lockout. The NCP3011 includes a number of additional features such as dual level power good, an enable/disable pin and external synchronization. The external synchronization allows two controllers to operation 180° out-of-phase for reduced input capacitance and system cost savings as well as offering the ability to synchronize to a higher switching frequency.

Packaging and Pricing

The NCP3020A and NCP3020B are available in a small footprint SOIC 8-pin package with a budgetary price of $0.30 per unit in 10,000 unit quantities. The NCP3011 is offered in a 14-pin TSSOP package and priced at $0.53 per unit in 10,000 unit quantities.

For more information, please visit http://www.onsemi.com [1].

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