BLDC Motor Drivers Serve Automotive Applications

Melexis announces today the next-generation IC Family for sensor-less and sensor based BLDC motor control for automotive applications. The new IC family follows the very successful MLX81200 core integration concept. This newest family of driver ICs combines voltage regulator, LIN -Transceiver, MCU, EEPROM, Flash, RAM, Power FET Pre-Driver and several dedicated circuit blocks for highly efficient BLDC motor control from a single IC. Customers can realize a very small PCB design with an absolute minimum BOM to create simple or sophisticated actuators.

The new IC family consists of 4 base family members; MLX81205, MLX81207, MLX81210 and MLX81215. Each is available in different memory configurations and in different package options. The IC family is 45V load dump protected and will be qualified according AEC-Q100 Grade 0 for high temperature automotive application support.

The MLX81205/07/10/15 are single die per package solutions (System On Chip). This brings customers a minimal BOM by reducing IC and system costs.

Similar to MLX81200, the new IC family supports the Melexis patented TruSense sensor-less driving algorithms in HW and SW for starting and driving BLDC motors in different constructions in a reliable way under unknown load conditions for a high dynamic range in speed. Different current wave form profiles (block, trapezoidal, sinusoidal) can be applied for optimal and energy efficient motor performance.

Melexis also introduces on this IC family a solution for slope control on Power

Transistor switching, allowing customers to optimize in software the EMC behavior, as well as thermal dissipation of the Power Transistors during the switching process.

Thomas Freitag, Product Line Manager of Melexis said: “Melexis addresses with the slope control several problems of electronic and mechatronic designers, that only have a very limited PCB space available to solve heat and EMC problems.”

The IC family targets permanent running BLDC motors typically found in various automotive applications. Examples include fuel pumps, water pumps, oil pumps, engine cooling fans, HVAC blowers and battery cooling fans where high energy efficiency and low system cost are in focus. The IC family concept allows platform designs, so that a high reuse in SW and discrete HW is achievable.

Availability

The first family member, the MLX81215 in QFN48 7x7 with software development setups, is available for alpha customers. Next family members and a general availability for developments at customers are planned to be ready in the next months. For more information go to our website or contact your nearest Melexis Sales office.

www.melexis.com [1].

Posted by Janine E. Mooney, Editor

May 08, 2012

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