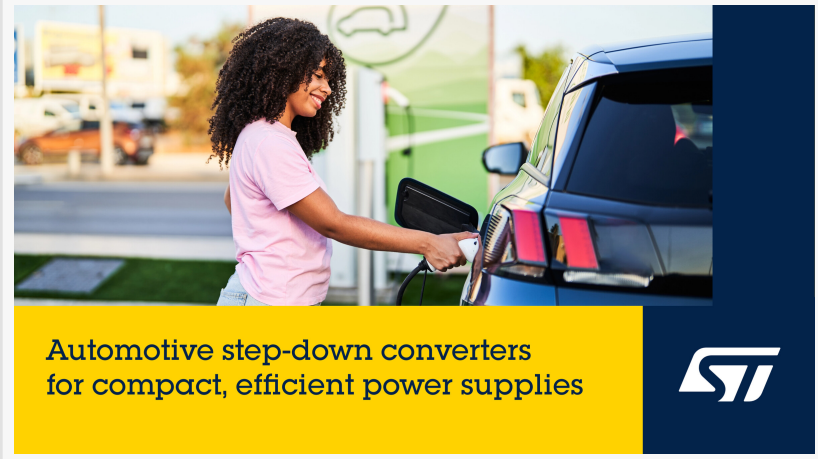
STMicroelectronics’ new high-current, low-voltage switching regulators handle challenging automotive loads

Small footprint, high efficiency, and design flexibility, delivering up to 6A as low as 0.6V



ST's DCP0606Y automotive step-down converters

GENEVA, SWITZERLAND, June 25, 2025 /EINPresswire.com/ -- STMicroelectronics’ DCP0606Y automotive step-down converters let designers build extremely compact and efficient step-down power supplies to deliver 6A maximum output current at a voltage as low as 0.6V.

The converters are conceived for applications such as telematics, heads-up displays, infotainment, multimedia and camera digital core power, ADAS power supplies, and others that require high-current low-voltage post regulation. An evaluation board, STEVAL-0606YADJ, is available now to simplify getting started and accelerate development.

With high-side and low-side MOSFETs, gate drivers, control logic, protection, and soft-start circuitry integrated in the DCP0606Y’s 3mm x 2mm package, the design is complete with minimal additional external components. A single resistor sets the switching frequency, which can be 1.8MHz, 2.25MHz, 3.5MHz, or 4MHz thereby permitting low capacitor and inductor values. Internal frequency dithering attenuates EMI peaks and the DCP0606Y allows further optimization by providing low-consumption and low-noise operating modes, selectable with an external pin. There is also a power-good indicator pin, an enable pin, and a soft-start pin that can be used as an input for output-voltage tracking and sequencing.

Power supplies built with the DCP0606Y can achieve high average efficiency, reaching 93% at full load current. By also leveraging pulse-skipping operation to maximize efficiency at light load, and with quiescent current of just 10µA, the DCP0606Y preserves energy in all operating conditions.

The DCP0606Y can operate from a 3.3V or 5V rail and lets the designer set the output from 0.6V up to the input voltage, VIN. A fixed output of 1.0V, 1.2V, 1.8V, 3.0V, or 3.3V is available on

request. Output-discharge circuitry is also optionally available, and all devices benefit from overvoltage, overcurrent, and overtemperature protection with auto-recovery. The parts are qualified to AEC-Q100 Grade 1 for operation from -40°C to 150°C.

The DCP0606Y regulators are available now in the 3mm x 2mm QFN package, from $0.95 for orders of 1000 pieces.

Please visit https://www.st.com/dcp0606y for more information.

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