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Charger's Low Termination Current Increases Battery Capacity

<u>Texas Instruments'</u> BQ25619 switching battery charger IC supports a termination current of 20 mA. Compared to competing devices, which typically support a termination current higher than 60 mA, TI's BQ25619 enables 7% higher battery capacity and longer run time, according to the vendor. The charger also delivers three-in-one boost converter integration and ultra-fast charging, offering 95% efficiency at a 4.6-V and 0.5-A output.

According to the company, the BQ25619 offers the additional benefit of the industry's lowest quiescent current, doubling the shelf life of ready-to-use electronics. The charger reduces battery leakage down to 6 μ A in shipping mode, which conserves battery energy to double the shelf life for the device. While in battery-only operation, the device consumes only 10 μ A, to support standby systems.

The BQ25619 helps engineers design more efficiently for small medical and personal electronics applications such as hearing aids, earbuds and wireless charging cases, IP network cameras, patient monitoring devices and personal care applications.

The charger also includes a settable top-off timer, which further increases run time, enabling users to charge their devices less frequently. Furthermore, it integrates three key funcions—charger, boost converter and voltage protection—to support efficient design for space-constrained applications and eliminate the external inductor required by previous-generation charger ICs. Due to its integrated bidirectional buck or boost topology, the BQ25619's charging and discharging capabilities require just a single power device.

The BQ25619 is available now through the TI store and authorized distributors. Offered in a 24-pin wafer quad flatpack no-lead (WQFN) package, the charger is priced at \$1.45 in 1,000-unit quantities. The 30-pin BQ25618, with similar features, will be offered in a smaller wafer chip-scale package (WCSP) in the third quarter of 2019. For more product details, see www.ti.com/BQ25619-pr. Designers can use the BQ25619 evaluation module (EVM) to easily evaluate the device's features and performance and speed time to market. The BQ25619EVM is available for \$99.



Figure. The BQ25619 integrates charger, boost converter and voltage protection in a single device. It offers what's said to be the industry's lowest termination current for switching chargers. The BQ25619's low quiescent current reduces battery leakage down to 6 μ A in ship mode, which conserves battery energy to double the shelf life for the device.