MagnaChip Introduces New Component to Enhance 5G/LTE Smartphone Battery Life and Protection

June 26, 2019

Low-Rss(on) LV MOSFET for Battery Protection Circuit Modules

SEOUL, South Korea and SAN JOSE, Calif., June 26, 2019 /PRNewswire/ -- MagnaChip Semiconductor Corporation ("MagnaChip" or the "Company") (NYSE: MX), a designer and manufacturer of analog and mixed-signal semiconductor products, announced today a new low-Rss(on)* LV (Low Voltage) MOSFET with reduced chip size for smartphone battery PCMs (Protection Circuit Modules).

Extended life and increased protection for batteries in high-end LTE and 5G smartphones are becoming increasingly important. 5G phones, in particular, need longer-lasting batteries with higher endurance than previous smartphones to process the massive amount of data with extremely fast download and upload capabilities. Inserted in the battery PCMs in LTE or 5G phones, this newly released MOSFET prevents over-voltage and over-current of the batteries and ultimately helps extend their life and resolve the overheating issue.

The Rss(on) of this new product, 20 percent lower than previous versions with the same chip size, prolongs the life of smartphone batteries by decreasing current loss and improving heat dissipation. This lower Rss(on) also enables higher-power density than previous versions to prevent over-heating of the battery during a quick charge (a feature supported by most of the latest smartphones). PCM functionality is also enhanced by an ESD (Electrostatic Discharge) protection diode added to the product. This diode mitigates ESDs of ≤ 2 kV to strengthen circuit protection and prevents damage to other smartphone components.

MagnaChip also has reduced the chip size of this new MOSFET by 10 percent (as compared to other LV MOSFETs currently on the MagnaChip portfolio), which offers greater design flexibility for circuit designers and even shrinks the PCM itself. With this reduction in size, WLCSP (Wafer Level Chip Scale Package) is possible for this product.

"Quick charging, fast processor speeds and other advanced specifications for new LTE and 5G smartphones require power products that provide superlatively high levels of battery protection," said YJ Kim, CEO of MagnaChip. "We are working closely with the OEM community to decrease the footprint of our MOSFETs and incorporate other product enhancements to meet these objectives."

* Rss(on): On resistance, the resistance value between the drain and source of a MOSFET during operation (ON)

About MagnaChip Semiconductor

MagnaChip is a designer and manufacturer of analog and mixed-signal semiconductor platform solutions for communications, IoT, consumer, industrial and automotive applications. The company's Standard Products Group and Foundry Services Group provide a broad range of standard products and manufacturing services to customers worldwide. MagnaChip, with about 40 years of operating history, owns a portfolio of approximately 3,000 registered patents and pending applications, and has extensive engineering, design and manufacturing process expertise. For more information, please visit www.magnachip.com.

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