IoT Growth Drives Demand for Silicon Labs' New Highly Integrated Power over Ethernet ICs

-- High-Efficiency, Feature-Rich Si3406x and Si3404 Powered Device Families Target IP Cameras, Wireless Access Points, IP Phones and Smart Lighting --

SAN ANTONIO, March 5, 2018 /PRNewswire/ -- **(APEC) –** Silicon Labs (NASDAQ: SLAB) has released two new Power over Ethernet (PoE) Powered Device (PD) families delivering best-in-class integration and efficiency for a wide range of Internet of Things (IoT) applications. Silicon Labs' Si3406x and Si3404 families include all necessary high-voltage discrete components on a single PD chip. The new PD ICs support IEEE 802.3 at PoE+ power capabilities, flexible power conversion options exceeding 90 percent efficiency, robust sleep/wake/LED support modes and superior EMI immunity. These capabilities help developers reduce system cost and time to market for high-power, high-efficiency PoE PD applications.

The rapid expansion of the IoT is boosting demand for PoE+ connectivity in IP cameras, smart lighting luminaires, feature-rich video IP phones, advanced 802.11 wireless access points and smart home appliances. These applications require higher wattage driving increased demand for PD devices that support the PoE+ standard. For example, the latest motor-positioned IP cameras with pan/tilt/zoom and heater elements create heavy loads on power supplies. PoE+ technology brings 30 watts of power to support these demanding application tasks. Silicon Labs' Si3406x family is the ideal PD interface solution for new classes of PoE+-enabled IoT products in residential, commercial and industrial environments.

"Silicon Labs' PoE solutions deliver a wide range of power levels up to 30 watts to meet our customers' demanding power supply needs," said Ross Sabolcik, Vice President of power products at Silicon Labs. "Our PD portfolio brings industry-leading integration and advanced features to help developers simplify their designs while meeting their power and cost budgets. Addressing both ends of the Ethernet cable, Silicon Labs' one-stop-shop PoE portfolio includes our new PD devices, as well as PSE controllers and PSE power management ICs."

The Si3406x ICs integrate all power management and control functions required for a PoE+ PD application, converting the high voltage supplied over a 10/100/1000BASE-T Ethernet connection to a regulated, low-voltage output supply. The optimized architecture minimizes printed circuit board (PCB) footprint and external BOM cost by enabling the use of economical external components while maintaining high performance.

Complementing the Si3406x family, the Si3404 IC offers cost-effective, 802.3 Type 1 compliant support for lower power 15 W PoE PD applications. The Si3404 includes all interface and control functions required for low-power PD applications in a very small footprint.

The Si3406x ICs integrate diode bridges and a transient surge suppressor, enabling direct connection to an Ethernet RJ-45 connector. The regulator's switching frequency is tunable with a simple external resistor value to avoid unwanted harmonics. An integrated synchronous driver can control a secondary side field effect transistor (FET) to improve power conversion efficiency. Connection to a PSE switch is maintained during sleep mode by an automated maintain-power-signature (MPS) feature.

The Si3406x family's current-mode-controlled switching regulator supports multiple isolated and non-isolated power supply topologies. The regulator is complemented by an integrated power switching FET. This flexibility, along with Silicon Labs' comprehensive PoE PD reference designs, makes it easier for developers to deploy critical power supply subsystems.

Pricing and Availability
Samples and production quantities of the Si3406x ICs are available now in low-profile, 5 mm x 5 mm QFN packages, and the Si3404 device is available now in a low-profile, 4 mm x 4 mm QFN package. Si3406x product pricing in 10,000-unit quantities begins at $1.34 (USD), and the Si3404 is priced at $1.02 (USD) in 10,000-unit quantities. To help developers reduce development time and cost, Silicon Labs offers a range of isolated and non-isolated Class 2-4 evaluation kits for Si3406x and Si3404 devices with prices starting at $79 (USD MSRP). For more information about the Si3406x and Si3404 families and evaluation kits and to order product samples, visit www.silabs.com/poe-pd.

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