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NEWS RELEASE

Power Integrations' New MinE-CAP IC Reduces Volume of AC-DC Converters by Up to 40%

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Novel MinE-CAP device dramatically reduces the input bulk capacitor size, reduces in-rush current by up to 95%, eliminates NTC thermistors and associated losses

SAN JOSE, Calif.--(BUSINESS WIRE)-- Power Integrations (Nasdaq: **POWI**), the leader in high-voltage integrated circuits for energy-efficient power conversion, today announced the **MinE-CAP**™ IC for high power density, universal input AC-DC converters. By halving the size of the high-voltage bulk electrolytic capacitors required in offline power supplies, this new type of IC enables a reduction in adapter size of up to 40%. The MinE-CAP device also dramatically reduces in-rush current making NTC thermistors unnecessary, increasing system efficiency and reducing heat dissipation.

This press release features multimedia. View the full release here:
https://www.businesswire.com/news/home/20201028005402/en/

Novel MinE-CAP device dramatically reduces the input bulk capacitor size, reduces in-rush current by up to 95%, eliminates NTC thermistors and associated losses (Photo: Business Wire)

Comments Power Integrations' product marketing director, Chris Lee: "The **MinE-CAP** will be a game-changer for compact chargers and adapters. Electrolytic capacitors are physically large, occupy a significant fraction of the internal volume and often constrain form factor options – particularly minimum thickness – of adapter designs. The MinE-CAP IC allows the designer to use predominantly low voltage rated capacitors for a large portion of the energy storage, which shrinks the volume of those components linearly with voltage. USB PD has driven a major market push towards small 65 W chargers and many companies have concentrated on increasing switching frequency to reduce the size of the flyback transformer. MinE-CAP provides more volume saving than doubling the switching

frequency, while actually increasing system efficiency."

The **MinE-CAP** leverages the small size and low RDSon of PowiGaN™ gallium nitride transistors to actively and automatically connect and disconnect segments of the bulk capacitor network depending on AC line voltage conditions. Designers using MinE-CAP select the smallest high-line rated bulk capacitor required for high AC line voltages, and allocate most of the energy storage to lower voltage capacitors that are protected by the MinE-CAP until needed at low AC line. This approach dramatically shrinks the size of input bulk capacitors without compromising output ripple, operating efficiency, or requiring redesign of the transformer.

Conventional power conversion solutions reduce power supply size by increasing switching frequency to allow the use of a smaller transformer. The innovative **MinE-CAP** IC achieves just as significant overall power supply size reduction while using fewer components and avoiding the challenges of higher EMI and the increased transformer/clamp dissipation challenges associated with high-frequency designs. Applications include smart mobile chargers, appliances, power tools, lighting and automotive.

Said Bhaskar Thiagaragan, Director of Power Integrations India Ltd.: "MinE-CAP ICs are excellent for all locations with wide ranging input voltages. In India we often design for voltages from 90 VAC to 350 VAC, with a generous surge de-rating above that. Engineers here often complain about the forest of expensive high-voltage capacitors required. MinE-CAP dramatically reduces the number of high-voltage storage components, and shields lower voltage capacitors from the wild mains voltage swings, substantially enhancing robustness while reducing system maintenance and product returns.

Housed in the miniature MinSOP-16A package, the new devices work seamlessly with Power Integrations' InnoSwitch™ family of power supply ICs with minimal external components. MinE-CAP MIN1072M ICs are available immediately from PI offices and franchised distributors and are priced at $1.75 for 10 Ku. Two initial design example reports (DERs) pair the MinE-CAP IC with Power Integrations' InnoSwitch3-Pro PowiGaN IC, INN3370C-H302. A 65 W USB PD 3.0 power supply with 3.3 V – 21 V PPS output for mobile phone / laptop chargers is described in DER-626, and DER-822 describes a 60 W USB PD 3.0 power supply for USB PD/PPS power adapters using INN3379C-H302.

Learn more about the family and download the reference designs at the Power Integrations website: **https://www.power.com/products/MinE-CAP**.

About Power Integrations

Power Integrations, Inc. is a leading innovator in semiconductor technologies for high-voltage power conversion. The company's products are key building blocks in the clean-power ecosystem, enabling the generation of

renewable energy as well as the efficient transmission and consumption of power in applications ranging from milliwatts to megawatts. For more information please visit **www.power.com**.

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Media Contact

Diane Vanasse
Power Integrations, Inc.
(408) 242-0027
diane.vanasse@power.com

Press Agency Contact

Nick Foot
BWW Communications
+44-1491-636 393
nick.foot@bwwcomms.com

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