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Ideal Power Completes Successful Proof of Concept Testing of its Double-Sided B-TRAN™

Test Results of Double-Sided Semiconductor Devices Support Third-Party Simulations

AUSTIN, Texas, March 05, 2018 (GLOBE NEWSWIRE) -- Ideal Power Inc. (NASDAQ:IPWR), an innovative power conversion technology company, has successfully completed proof of concept testing of double-sided Bi-directional bi-polar junction TRANsistor (B-TRAN™) prototypes. Tests confirmed that gain, breakdown voltage, and low conduction losses closely match characteristics from third party simulations. Two designs, a standard double-sided and a full-featured one-sided B-TRAN™, were produced by two different semiconductor fabricators. These devices validate the ability to make B-TRAN™ semiconductor power switches using conventional silicon semiconductor fabrication equipment and processes.

“This is an important step in the development of Ideal Power’s double-sided B-TRAN™ device,” said Ideal Power Chairman Lon Bell. “These results validate the fundamental properties of the B-TRAN™ structure, its potential performance, and the capability of current semiconductor manufacturing to produce the double-sided devices.”

Test results on the standard double-sided prototypes measured B-TRAN™ electrical losses at less than 40% that of conventional power switches such as silicon insulated-gate bipolar transistors (IGBTs). Ideal Power Chairman Bell added, “B-TRAN™’s enhanced switching performance translates into higher energy conversion efficiency, lower cooling complexity and fewer components in bi-directional applications compared to conventional power switches.”

The Company believes the B-TRAN™ has the potential to address the multi-billion dollar power semiconductor market including solar photovoltaic inverters, microgrid power conversion systems, electric vehicle drivetrains, bi-directional energy storage, solid-state DC and AC contactors and breakers, variable frequency drives and other power conversion and control applications that could benefit from B-TRAN™’s enhanced switching performance. Ideal Power currently has 35 issued patents in the U.S. and abroad with over 40 patents pending that cover the B-TRAN™’s design, its application and manufacturing processes.

The results of this testing will be incorporated into the B-TRAN™ design and their manufacturing process. With the double-sided transistor behavior and low conduction losses

confirmed, the next step is to incorporate planned corrections and improvements in the manufacturing process followed by the fabrication of prototype engineering samples for potential customers and partners.

About Ideal Power Inc.
Ideal Power (NASDAQ:IPWR) is a power conversion technology company that delivers innovative solutions to system integrators and project developers, enabling distributed energy resources for applications both on and off the grid. Ideal Power's products deliver superior reliability and compelling return on investment for renewable energy and storage applications at a competitive cost, backed by first-rate customer service. With its patented power conversion technology, Ideal Power supports a broad set of growing markets, including solar + storage, battery energy storage, and microgrids. For more information, visit www.IdealPower.com.

Safe Harbor Statement
All statements in this release that are not based on historical fact are "forward looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 and the provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. While management has based any forward-looking statements included in this release on its current expectations, the information on which such expectations were based may change. These forward-looking statements rely on a number of assumptions concerning future events and are subject to a number of risks, uncertainties and other factors, many of which are outside of our control that could cause actual results to materially differ from such statements. Such risks, uncertainties, and other factors include, but are not limited to, whether commercial B-TRAN™ devices will perform consistent with the results of third party simulations, market acceptance of the B-TRAN™, whether the B-TRAN™ can be successfully and economically manufactured, whether the patents for our technology provide adequate protection and whether we can be successful in maintaining, enforcing and defending our patents, whether a demand for energy storage products will grow, whether demand for our products, which we believe are disruptive, will develop and whether we can compete successfully with other manufacturers and suppliers of energy conversion products, both now and in the future, as new products are developed and marketed. Furthermore, we operate in a highly competitive and rapidly changing environment where new and unanticipated risks may arise. Accordingly, investors should not place any reliance on forward-looking statements as a prediction of actual results. We disclaim any intention to, and undertake no obligation to, update or revise forward-looking statements.

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