



***Teardowns, deep analysis of competing products and technologies for new product development, patents' enforcement, and defense***

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## ***APEC 2018 Promises to be an exciting, informative event***

By Louis Burgyan, LTEC Corporation



***February 2018.*** Established for many years as one of the most widely attended events within the power electronics industry, the Applied Power Electronics Conference, to be held during March 3-7 in San Antonio, TX, promises to be a uniquely informative event. Proceeding along three tracks—the Educational Session, Industry Session, and Technical Session—the conference features an impressive array of technical papers and presentations. In addition, a record number of exhibiting companies offer presentations. The Industry Session alone features 101 presentations, many of them focusing on hot topics of interest involving SiC and GaN devices, systems, and applications.

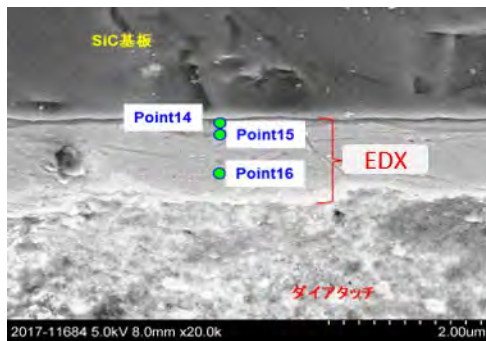
LTEC Corporation's engineering team offers an Industry Session presentation titled: ***“Modeling Thermal Impedance of GaN and SiC Power Transistors Under Short-Circuit Conditions.”*** This paper describes how physical analysis of power semiconductor devices can be used to create a more accurate model to predict internal temperature rise within the semiconductor die under short-circuit conditions. The LTEC approach is useful to assess short-circuit survival capabilities of competing products by means of comparative physical analysis-based transient thermal impedance modeling. This simple method is quite useful to identify the most robust devices among competing products.

LTEC Corporation's Exhibitor Presentation titled: ***“Predict Wide Bandgap Power Device Technology Trends Through Benchmarking and Deep Analysis”*** offers a practical example for predicting technology trends based on physical analysis-based data collected over a long period of time. Additional informative analysis examples reveal hidden features of products and technologies. The company has a long history of working collaboratively with product development engineers, R&D teams, and patent departments to enhance product definition capabilities, reduce time to market, and help create and protect intellectual property. LTEC will introduce several new technical reports this year. You can access the latest brochures at APEC 2018 in our Exhibit Booth No. 305 or by visiting our website at [www.ltecusa.com](http://www.ltecusa.com).

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## *New technical analysis reports:*

### ***WOLFSPEED C3M0075120K 3rd GENERATION 1200V SiC POWER MOSFET ANALYSIS REPORT***

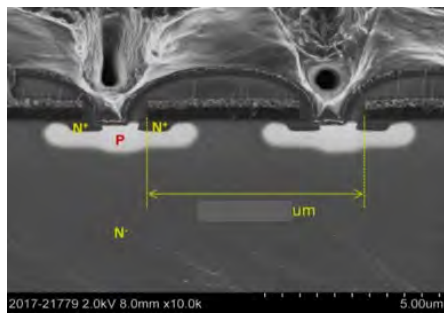


LTEC Corporation released a detailed structure and process analysis report of this advanced planar silicon carbide MOSFET device using a unique asymmetric trench-gate design. This device has 35% smaller die size and 30% smaller Ron relative to a 2nd generation version. The report has two individually purchasable sections: a 67-page Structure Analysis and a 28-page Process Analysis section. The Structure Analysis section reveals the physical construction of the device, including

EDX materials analysis and many other fine details. The Process Analysis section includes manufacturing process flow, the estimated number of photomasking steps and the impurity concentration of the epitaxial layer [17G-0010-1].

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### ***LITTLEFUSE LSIC1M0120E0080 1st GEN. 1200V SiC POWER MOSFET ANALYSIS REPORT***

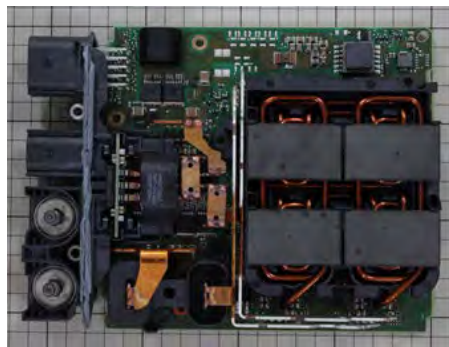


LTEC Corporation released a detailed structure and process analysis report of this 1200V SiC MOSFET device, the first product introduced by Littlefuse Inc. Littlefuse is a majority investor in SiC technology developed by Monolithic Semiconductor Inc. This product is reported to be the first product developed under the partnership. The report has two individually purchasable sections: a 95-page Structure Analysis and a 24-page Process Analysis section. The report

also includes device comparison data with Rohm, Wolfespeed, and Infineon products. [17G-0025-1].

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### ***AUDI SQ7 HYBRID 48V/12V DC-DC CONVERTER ANALYSIS REPORT***



LTEC Corporation released a new analysis report of the DC-DC converter used in the Audi SQ7 hybrid vehicle. The unit was manufactured by Bosch. European car makers are developing 48V hybrid systems to improve cost, efficiency and fuel consumption. We believe, the development of this DC\_DC converter is a significant step in moving forward with performance enhancements. The SQ7 is the first 48V hybrid system developed by Audi. The system uses a multi-phase trans-linked buck-boost converter having 96%

efficiency [17G-0023-1].

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## *New analysis reports in the planning phase:*

### *2017 NISSAN LEAF ELECTRIC VEHICLE 6.6KVA ON-BOARD CHARGER (ODB) DETAILED ANALYSIS*



LTEC Corporation is planning to analyze the Nissan LEAF on-board charger manufactured by Panasonic. A 40kW large capacity battery and a powerful motor provide propulsion for this vehicle. The 400km driving distance is 40% longer than the previous model has. The battery pack can be fully charged in 40 minutes. **Please contact [www.ltecusa.com](http://www.ltecusa.com) to indicate your desired content of interest.**

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### *2017 AUDI A8 'AI TRAFFIC JAM PILOT' LIDAR TEARDOWN ANALYSIS REPORT*

LTEC Corporation is planning to analyze Valeo's SCALA high-performance LIDAR system used in the 2017 Audi A8 model. This is the **first product ever** introduced to support Level3 automatic operation in a publicly sold vehicle. The **"AI Traffic Jam Pilot" LIDAR**, as identified by Audi, is mounted within the front bumper region of the Audi A8. **Please contact [www.ltecusa.com](http://www.ltecusa.com) to indicate your desired content of interest.**

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#### **About LTEC Corporation**

LTEC, Japan's dominant intellectual property analysis company, provides in-depth competitive technical analysis, benchmarking, and reverse engineering services for the research and development engineering and industrial legal communities in the form of an innovative and collaborative approach. The primary focus of the company is on vehicle electrification, autonomous vehicles, ADAS, all types of semiconductors including SiC and GaN devices, and automotive and power electronics. With regional offices in the USA, Japan, Korea, and Taiwan, LTEC helps its customers overcome intellectual property (patent) research, analysis, and protection challenges across all sectors of electronics. With over 100 highly trained engineers and Ph. D.s and 33-years of an impeccable track record, LTEC stands ready to help retain or gain a competitive edge for its clients worldwide. [www.ltecusa.com](http://www.ltecusa.com)



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