

Forecasting System Reliability in Real-World Mission Profiles in EPC's Phase 16 Report on GaN Reliability

Efficient Power Conversion publishes Phase-16 Reliability Report adding new findings to the extensive knowledge base on GaN reliability and mission robustness.

EL SEGUNDO, CA, UNITED STATES, March 12, 2024 /EINPresswire.com/ -- [EPC](#) announces the publication of its [Phase-16 Reliability Report](#), documenting continued work using test-to-fail methodology and adding specific guidelines for overvoltage specifications and improving thermo-mechanical reliability.

Compared to the [Phase 15 Reliability Report](#), this version presents expanded data and analysis. It now includes a general overview of the wear-out mechanisms of primary concerns for a given application. New to this version of the report, is a description of how to forecast the reliability of a system in a realistic mission profile that combines periods of substantial and minor stress.

Adding to the existing knowledge base, this report includes significant new material on the thermo-mechanical wear-out mechanisms and overvoltage guidelines. Thermo-mechanical wear-out mechanisms include a study of the impact of die size and bump shape on temperature cycling (TC) reliability. This report also includes a study of overvoltage robustness for both the gate and the drain of GaN transistors.

This report is divided into the following sections:

Section 1: Determining wear-out mechanisms using test-to-fail methodology.

Section 2: Using test-to-fail results to predict device lifetime in a system.

Section 3: Wear-out mechanisms

Section 4: Mission-specific reliability predictions including solar, DC-DC, and lidar applications.

Section 5: Summary and conclusions



EPC's Release Phase 16 Report on GaN Reliability



The release of our Phase-16 report ... provides valuable insights on mission robustness, ensuring devices meet the demands of diverse applications."

Alex Lidow, CEO, and co-founder of EPC

Appendix: Solder stencil design rules for reliable assembly of PQFN packaged devices

According to Dr. Alex Lidow, CEO and co-founder of EPC, "The release of our Phase-16 report satisfies a critical need for ongoing research into GaN device reliability. This report provides valuable insights on mission robustness, ensuring devices meet the demands of diverse applications."

About EPC

EPC is the leader in enhancement mode gallium nitride

(eGaN®) based power management. eGaN FETs and integrated circuits provide performance many times greater than the best silicon power MOSFETs in applications such as DC-DC converters, remote sensing technology (lidar), motor drives for eMobility, robotics, and drones, and low-cost satellites.

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