

Projected GaN Device Lifetime in Real World Applications Presented in EPC's Phase 15 Report on GaN Reliability

Efficient Power Conversion (EPC)

publishes Phase-15 Reliability Report

adding to the extensive knowledge base on GaN reliability and mission robustness.

EL SEGUNDO, CA, USA, April 4, 2023 /EINPresswire.com/ -- EPC announces the publication of its

[Phase-15 Reliability Report](#), documenting continued work using test-to-fail methodology and adding specific reliability metrics and predictions for real world applications including [solar optimizers](#), lidar sensors, and [DC-DC converters](#).

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Alex Lidow, EPC CEO and Co-Founder

This report presents the results of testing eGaN devices to the point of failure, which provides the information to identify intrinsic failure mechanisms of the devices. By identifying these intrinsic failure mechanisms, physics-based models that accurately project the safe operating life of a product over a more general set of operating

conditions are developed. This is applied to information from real-world experience to determine mission robustness for specific applications.

This report is divided into eight sections, each dealing with a different failure mechanism or application case:

Section 1: Voltage/temperature stress on the gate

Section 2: Voltage/temperature stress on the drain

Section 3: Safe operating area (SOA)

Section 4: Short-circuit robustness testing

Section 5: Mechanical force stress testing

Section 6: Thermo-mechanical stress

Section 7: Reliability test results for long-term lidar pulse stress conditions

Section 8: Using test-to-fail methodology to accurately predict how eGaN devices can last more than 25 years in solar applications

Section 9: Applying the physics-based model to real-world DC-DC converter use cases

According to Dr. Alex Lidow, CEO and co-founder of EPC, “The release of EPC’s Phase-15 reliability report examines information from real-world experience that either confirms the laboratory-derived data or opens new questions about mission robustness that leads to a deeper understanding of the behavior of GaN devices over a wide range of stress conditions.”

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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Press contact: Efficient Power Conversion: Renee Yawger tel: 908.619.9678 email: renee.yawger@epc-co.com

Renee Yawger
Efficient Power Conversion
+1 908-619-9678

[email us here](#)

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