

VisIC introduces 100kW motor inverter reference design for 800V power-bus based on D³GaN

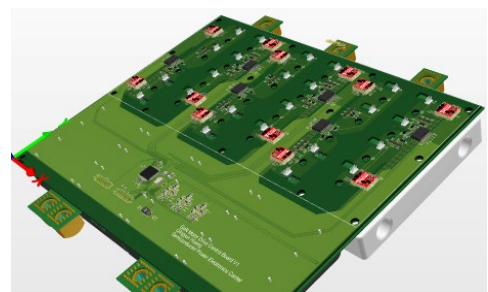
VisIC's D³GaN technology powers most cost-effective inverters up to 800V power-bus

Ness-Ziona, Israel: March 16, 2020 VisIC Technologies Ltd., a Gallium Nitrate (GaN) power semiconductor device leader in the fast-developing Automotive, Data Centers and Industrial markets, today announced a breakthrough using GaN for 800V power-bus motor inverter that can be used for a cost effective EV Motor Drive. University of Texas at Austin and VisIC Technologies cooperated on the 100kW inverter reference design that can be used as a base for Inverter designs for EV, Industrial, PV and other applications.

WBG power technology is fast becoming the technology of choice to replace Silicon power technology in EV Motor Drive to achieve better efficiency. It is commonly viewed that GaN technology will be used primarily in the 400V power-bus due to its lower cost compared to other WBG technologies, and SiC is commonly used in the high voltage 800V power-bus for higher power applications. The new 100kW inverter reference design from VisIC proves that GaN technology can also be used in the 800V power-bus applications, producing the most cost-effective solution for both 400V and 800V EV power-bus.

Based on VisIC's unique D³GaN technology, this 100kW inverter reference design can be adapted to work both under 800V and 900V power-bus. The VisIC GaN devices have highly thermal efficient SMD packaging, high threshold voltage, fast switching and easy paralleling for most cost effective, highly efficient, and reliable inverter solution for EV.

The estimated peak efficiency can reach 99.3% with 40kHz switching frequency, due to the low switching losses of D³GaN devices. The total dimension is 26.9x21.4x3.5cm³ with liquid cooling heatsink. The power density is 50kW/Liter including the liquid cooling. The total weight is about 2.5kg.



3D pictures of the developed 100kW 800V GaN EV inverter

“Previously GaN has demonstrated its superior performance in achieving high power density for chargers. Thanks to VisIC GaN’s superior packaging concept and low losses, we believe high power density can also be achieved in very high-power application such as traction inverters”, said Dr. Alex Huang, director of The Semiconductor Power Electronics Center at University of Texas at Austin.


“We are very happy with the cooperation with University of Texas as they've shown professional power design and innovative system solution” said Gregory Bunin, VisIC CTO “this breakthrough will also enable the 800 V EV power-bus to benefit from the GaN low cost and high efficiency technology and provide cost effective EV cars, for greener and cleaner planet”.

As APEC 2020 was cancelled the inverter reference design will be on display at **PCIM, booth 9-137** in Nuremberg, Germany on July 28-30, 2020. For more information you can contact us directly at info@visic-tech.com

About VisIC Technologies:

Based in Israel, VisIC Technologies Ltd. was established by experts in Gallium Nitride (GaN) technology to develop and market advanced GaN-based power conversion products. VisIC has successfully developed, and is bringing to market, high power GaN-based transistors and modules. (GaN is expected to replace most of the Silicon-based (Si) products currently used in power conversion systems). Its high efficiency and reliable products designed for high power conversion for hybrid and electric vehicles, Datacenters, renewable energy and industrial motors. VisIC has been granted keystone patents for GaN technology and has additional patents pending. For more information about VisIC Technologies please visit www.visic-tech.com and [LinkedIn](#)

About Semiconductor Power Electronics Center, the University of Texas at Austin:

The logo for the Semiconductor Power Electronics Center (SPEC) consists of a circular icon on the left containing a stylized orange waveform. To the right of the icon, the word "SPEC" is written in a large, bold, orange serif font. Below "SPEC", the full name "Semiconductor Power Electronics Center" is written in a smaller, orange, sans-serif font.

Semiconductor Power Electronics Center (SPEC) at The University of Texas at Austin is devoted to investigating new semiconductor and converter technologies that can improve electrical power conversion, distribution and protection in a broad range of applications such as data center, electric vehicle motor drive, charging stations, electrical power grid and microgrid and renewable energy systems. SPEC has a worldwide reputation for its advanced research, its close relationship with industry and a large pool of talented students and postdoctoral researchers. For more information about SPEC, please visit <http://spec.ece.utexas.edu/>.

