Vishay Intertechnology 600 V E Series Power MOSFET in Compact Top-Side Cooling PowerPAK® 8 x 8LR Delivers Industry's Lowest RDS(ON)*Qg FOM

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Fourth-Generation Device Enables Higher Power Ratings and Density Versus D²PAK While Lowering Conduction and Switching Losses to Increase Efficiency

MALVERN, Pa., May 01, 2024 (GLOBE NEWSWIRE) -- To provide higher efficiency and power density for telecom, industrial, and computing applications, Vishay Intertechnology, Inc. (NYSE: VSH) today introduced its first fourth-generation 600 V E Series power MOSFET in the new PowerPAK® 8 x 8LR package. Compared to previous-generation devices, the Vishay Siliconix n-channel SiHR080N60E slashes on-resistance by 27 % and resistance times gate charge, a key figure of merit (FOM) for 600 V MOSFETs used in power conversion applications, by 60 % while providing higher current in a smaller footprint than devices in the D²PAK package.

Vishay offers a broad line of MOSFET technologies that support all stages of the power conversion process, from high voltage inputs to the low voltage outputs required to power the latest high tech equipment. With the SiHR080N60E and other devices in the fourth-generation 600 V E Series family, the company is addressing the need for efficiency and power density improvements in two of the first stages of the power system architecture — power factor correction (PFC) and subsequent DC/DC converter blocks. Typical applications will include servers, edge computing, super computers, and data storage; UPS; high intensity discharge (HID) lamps and fluorescent ballast lighting; telecom SMPS; solar inverters; welding equipment; induction heating; motor drives; and battery chargers.

Measuring 10.42 mm by 8 mm by 1.65 mm, the SiHR080N60E's compact PowerPAK 8 x 8LR package features a 50.8 % smaller footprint than the D²PAK while offering a 66 % lower height. Due to its top-side cooling, the package delivers excellent thermal capability, with an extremely low junction to case (drain) thermal resistance of 0.25 °C/W. This allows for 46 % higher current than the D²PAK at the same on-resistance level, enabling dramatically higher power density. In addition, the package's gullwing leads provide excellent temperature cycle capability.

Built on Vishay's latest energy-efficient E Series superjunction technology, the SiHR080N60E features low typical on-resistance of 0.074 Ω at 10 V and ultra low gate charge down to 42 nC. The resulting FOM is an industry-low 3.1 Ω*nC, which translates into reduced conduction and switching losses to save energy and increase efficiency in power systems > 2 kW. For improved switching performance in hard-switched topologies such as PFC, half-bridge, and two-switch forward designs, the MOSFET released today provides low typical effective output capacitances $C_{o(er)}$ and $C_{o(tr)}$ of 79 pF and 499 pF, respectively. The package also provides a Kelvin connection for improved switching efficiency.

The device is RoHS-compliant and halogen-free, and it is designed to withstand overvoltage transients in avalanche mode with guaranteed limits through 100 % UIS testing.

Samples and production quantities of the SiHR080N60E are available now. For lead time information, please contact your local sales office.

Vishay manufactures one of the world's largest portfolios of discrete semiconductors and passive electronic components that are essential to innovative designs in the automotive, industrial, computing, consumer, telecommunications, military, aerospace, and medical markets. Serving customers worldwide, Vishay is **The DNA of tech.**® Vishay Intertechnology, Inc. is a Fortune 1,000 Company listed on the NYSE (VSH). More on Vishay at www.Vishay.com.

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Link to product datasheet:
http://www.vishay.com/ppg?92494 (SiHR080N60E)

Link to product photo:
https://www.flickr.com/photos/vishay/albums/72177720316480848

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