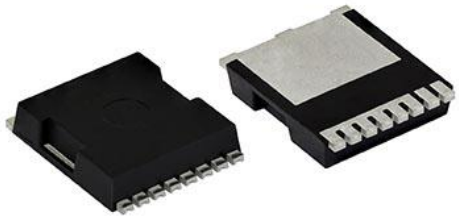
New SiHK050N65E Gen 4.5 650 V E Series Power MOSFET Delivers Industry's Lowest $R_{DS(ON)}$*Q_g and $R_{DS(ON)}$*$C_{o(er)}$ FOMs, Enables High Power Ratings and Density While Lowering Conduction and Switching Losses to Increase Efficiency

Product Benefits:

- Low typical on-resistance of 0.048 Ω at 10 V results in a higher power rating for applications > 6 kW
- Ultra low gate charge down to 78 nC
- Industry-low 3.74 Ω*nC on-resistance times gate charge figure of merit (FOM) translates into reduced conduction and switching losses to save energy and increase efficiency
- Low typical effective output capacitances $C_{o(er)}$ and $C_{o(tr)}$ of 167 pF and 1119 pF, respectively, improve switching performance in hard-switched topologies such as PFC and two-switch forward designs
- Industry-low on-resistance times $C_{o(er)}$ FOM of 8.0 Ω*pF
- Offered in the PowerPAK® 10 x 12 package with a Kelvin connection for reduced gate noise and provides increased dv/dt ruggedness
- Designed to withstand overvoltage transients in avalanche mode with guaranteed limits through 100 % UIS testing
- RoHS-compliant and halogen-free



Market Applications:

- Power factor correction (PFC) and subsequent DC/DC converter blocks in servers, edge computing, and super computers; UPS; high intensity discharge (HID) lamps and fluorescent ballast lighting; telecom SMPS; solar inverters; welding equipment; induction heating; motor drives; and battery chargers

The News:

Vishay Intertechnology introduces a new Gen 4.5 650 V E Series power MOSFET that delivers high efficiency and power density for telecom, industrial, and computing applications. Compared to previous-generation devices, the Vishay Siliconix n-channel SiHK050N65E slashes on-resistance by 48.2 %, while offering a 65.4 % lower resistance times gate charge, a key figure of merit (FOM) for 650 V MOSFETs used in power conversion applications.

- Built on Vishay's latest energy-efficient E Series superjunction technology
- 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 SiHK050N65E and other devices in the Gen 4.5 650 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
- With 50 V of additional breakdown voltage, the 650 V device addresses 200 VAC to 277 VAC input voltages and the Open Compute Project's Open Rack V3 (ORV3) standards

- The SiHK050N65E addresses the specific titanium efficiency requirements in server power supplies or reaches 96 % peak efficiency

The Key Specifications:

- Drain-source voltage: 650 V
- Typical on-resistance at 10 V: 0.048 Ω
- Typical gate charge at 10 V: 78 nC
- Effective output capacitance:
  - $C_{o(er)}$ of 167 pf
  - $C_{o(tr)}$ of 1119 pF
- Package: PowerPAK 10 x 12

Availability:
Samples and production quantities of the SiHK050N65E are available now. For lead time information, please contact your local sales office.

To access the product datasheet on the Vishay Website, go to
http://www.vishay.com/ppg?92559 (SiHK050N65E)

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