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New SiC645 and SiC645A Space-Saving 60 A VRPower® Smart Power Stages Increase Current Monitoring Accuracy While Simplifying Designs

Product Benefits:

- Accurate, integrated current (IMON) and temperature (TMON) monitoring
- Combine power MOSFETs, an advanced driver IC, and a bootstrap FET
- Offered in thermally enhanced 5 mm by 5 mm PowerPAK® MLP55-32L package
 - Can be cooled on both sides
- Dedicated low-side FET control pin supports light-load efficiency
- Low package parasitic resistance and inductance enable high switching frequencies of up to 2 MHz
- Fault protection features:
 - High-side FET short and overcurrent protection
 - Over-temperature protection
 - Undervoltage lockout (UVLO)
- Open drain fault reporting output
- Support 5 V and 3.3 V PWM tri-level input
- Compatible with Intersil's ISL68/69xx and ISL958xx digital multiphase controllers
- RoHS-compliant and halogen-free



Market Applications:

- VRMs and VRDs to power microprocessor and memory for servers, networking, and cloud computing; GPUs in graphic cards and video game consoles; as well as general purpose multi-phase point-of-load (POL) DC/DC converters

The News:

Meeting the need for real-time processor and memory power consumption monitoring in high-performance telecom equipment and datacenter servers, Vishay Intertechnology introduces two new 60 A VRPower smart power stages with integrated current and temperature monitors for multiphase DC/DC systems. Combining power MOSFETs, an advanced driver IC, and a bootstrap FET in the thermally enhanced 5 mm by 5 mm PowerPAK MLP55-32L package, the Vishay Siliconix SiC645 and SiC645A simplify designs and deliver higher accuracy than standard DrMOS products, while offering a 16 % smaller footprint than similar competing devices.

- Utilize low-side MOSFET $R_{DS(ON)}$ sensing to report current (IMON) and temperature (TMON) using 5 mV/A and 8 mV/C signals, respectively
 - Accurate over a wide load range
 - Internally temperature-compensated, removing the need for external circuitry



New Product Info



Product Group: Vishay Siliconix, ICs / November 2016

- Eliminates current sense traces while delivering fast performance without noise or external filtering
- Meet Intel's stringent VR13 and VR13.x current monitoring accuracy requirements
- Allow for better utilization of a server CPU's turbo capability, a critical advantage for datacenter customers requiring improved performance without increasing costs

The Key Specifications:

- Package: PowerPAK MLP55-32L
- Continuous current: 60 A
- Input voltage range: 4.5 V to 18 V
- PWM tri-level input:
 - SiC645: 5 V
 - SiC645A: 3.3 V

Availability:

Samples and production quantities of the smart power stages are available now, with lead times of 10 weeks.

To access the product datasheet on the Vishay website, go to <http://www.vishay.com/ppg?65424> (SiC645)

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