

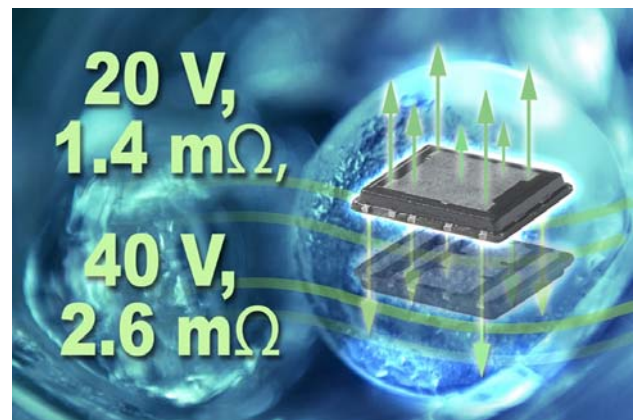


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New N-Channel PolarPAK[®] Power MOSFETs

The Key Benefits:

- Double-sided cooling helps designers reduce system size and cost through better MOSFET thermal performance
- Deliver up to 48% better on-resistance and 12% better on-resistance-times-gate-charge performance than the next-best devices on the market with double-sided cooling
 - Lower conduction and switching losses reduce power consumption in end systems
- Fixed footprint and pad layout independent of die size across range of family, simplifying design-in of devices with new generations of silicon
- Easy to parallel, lowering inductance from board layouts
- Standard leadframe and plastic encapsulation construction provide better die protection



The Key Applications:

- Synchronous rectification, point-of-load converters, and OR-ing applications in voltage regulator modules (VRM) for servers and workstations, and telecom and data communications systems

The News:

Vishay's New 20-V to 40-V PolarPAK[®] Power MOSFETs Combine Thermal Benefits of Double-Sided Cooling Package with On-Resistance Down To 1.4 Milliohms

Vishay Intertechnology, Inc. (NYSE: VSH) adds new n-channel 20-V, 30-V, and 40-V devices to its PolarPAK[®] family of power MOSFETs with double-sided cooling, helping designers reduce system size and cost in a new range of applications through better MOSFET thermal performance.

- Four new devices with breakdown voltages ranging from 20 V to 40 V
- Share the same footprint area as the standard SO-8 yet are twice as thin, with a height profile of just 0.8 mm
- Dual heat dissipation paths provided by double-sided cooling construction allow high current densities in systems with forced air cooling, enabling more compact designs and/or the ability to reduce the number of paralleled MOSFETs
- 40-V devices provide more design margin with nearly the same efficiency as the 30-V devices
- Two devices also released with somewhat higher on-resistance for cost-sensitive applications where an



industry-low level of on-resistance is not required

- Offer manufacturers maximum flexibility, reliability, and ease in handling
- First MOSFET package with double-sided cooling to be sourced by multiple manufacturers

The Key Specifications:

Part Number	V _{DS} (V)	V _{GS} (V)	r _{DS(on)} @ V _{GS} = 10 V (mΩ)	r _{DS(on)} @ V _{GS} = 4.5 V (mΩ)	r _{DS(on)} @ V _{GS} = 2.5 V (mΩ)	Q _a (nC)
SiE810DF	20	12	1.4	1.6	2.7	90
SiE808DF	20	20	1.6	2.5		46
SiE806DF	30	12	1.7	2.1		75
SiE830DF*	30	12	4.2	4.8		33
SiE812DF	40	20	2.6	3.4		52
SiE832DF*	40	20	5.5	7.0		25

*Higher on-resistance devices for applications where minimizing switching losses is more critical than low conduction losses.

The Perspective: Now designers of synchronous rectification, point-of-load converters, and OR-ing applications have double-sided cooling MOSFETs with the breakdown voltages these systems require. Featuring the same footprint area as the standard SO-8 and a height profile of just 0.8 mm, the new 20-V, 30-V, and 40-V devices deliver up to 48 % better on-resistance and 12 % better on-resistance-times-gate-charge performance than the next-best devices on the market with double-sided cooling.

Availability: Samples and production quantities of the new PolarPAK power MOSFETs are available now, with lead times of 8 to 10 weeks for larger orders.

PolarPAK is a registered trademark of Siliconix incorporated

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