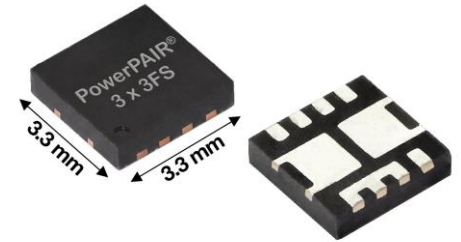




New SiZF5300DT and SiZF5302DT 30 V Symmetric Dual MOSFETs in PowerPAIR® 3x3FS Package Achieve 98 % Efficiency, Require 63 % Less PCB Space Than the PowerPAIR 6x5F to Reduce Component Counts and Simplify Designs

Product Benefits:

- High and low side TrenchFET® Gen V MOSFETs integrated in a single 3.3 mm by 3.3 mm PowerPAIR 3x3FS package
 - Delivers increased efficiency, while reducing component counts and simplifying designs
 - High and low side MOSFETs form an optimized combination for 50 % duty cycles
- Efficiency of 98 % at 100 W for high frequency switching applications
 - Typical on-resistance down to 2.02 mΩ at 10 V for the SiZF5300DT and 2.7 mΩ at 10 V for the SiZF5302DT
 - Typical gate charge of 9.5 nC at 4.5 V for the SiZF5300DT and 6.7 nC at 4.5 V for the SiZF5302DT
 - Ultra low on-resistance times gate charge, a key figure of merit (FOM) for MOSFETs used in power conversion applications
- Flip-chip technology enhances thermal dissipation
- 100 % Rg- and UIS-tested, RoHS-compliant, and halogen-free



Market Applications:

- Suitable circuits: synchronous buck, buck-boost, and half-bridge topologies
Point of load (POL) conversion, DC/DC modules in laptops with USB-Type C power delivery, Servers, DC cooling fans, and telecom equipment

The News:

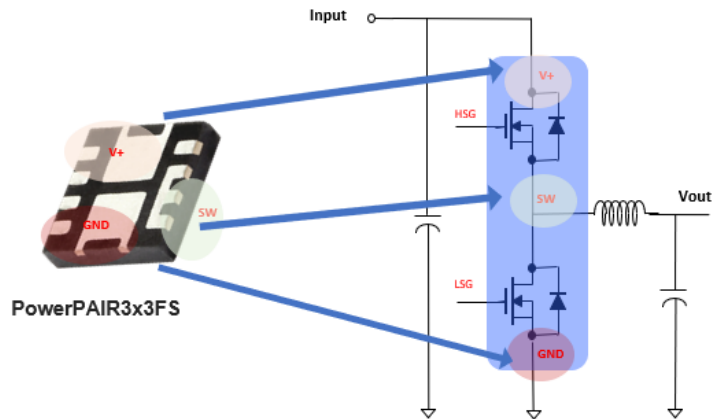
Vishay Intertechnology introduces two new 30 V symmetric dual n-channel power MOSFETs that combine high and low side TrenchFET Gen V MOSFETs in a single 3.3 mm by 3.3 mm PowerPAIR 3x3FS package. For power conversion in computing and telecom applications, the Vishay Siliconix SiZF5300DT and SiZF5302DT increase efficiency while reducing component counts and simplifying designs.

- The dual MOSFETs can be used in place of two discrete devices in the PowerPAK 1212 package — saving 50 % board space — while offering a 63 % smaller footprint than dual MOSFETs in the PowerPAIR 6x5F
- The high and low side MOSFETs of the SiZF5302DT form an optimized combination for 50 % duty cycles and best in class efficiency, in particular from 1 A to 4 A, while the SiZF5300DT provides an optimized combination for heavy loads in the 12 A to 15 A range
- The SiZF5300DT and SiZF5302DT phase in Vishay's 30 V Gen V technology for optimal on-resistance and gate charge
- The devices' on-resistance times gate charge FOM is 35 % lower than previous-generation solutions with similar on-resistance. For high frequency switching applications, the result is a 2 % increase in efficiency
- A unique pin configuration enables a simplified PCB layout and supports shortened switching loops to minimize parasitic inductance

The Key Specifications:

Part number	SiZF5300DT	SiZF5302DT
V_{DS} (V)	30	30
V_{GS} (V)	+ 16 / -12	+ 16 / -12
$R_{DS(on)}$ typ. (m Ω) @	10 V	2.7
	4.5 V	4.4
Q_g (Typ.) @ 4.5 V (nC)	9.5	6.7
I_D (A) @	$T_A = 25^\circ\text{C}$	100
	$T_A = 70^\circ\text{C}$	80

Design Concept:



Availability:

Samples and production quantities of the SiZF5300DT and SiZF5302DT are available now.

To access the product datasheets on the Vishay Website, go to

<https://www.vishay.com/ppg?62071> (SiZF5300DT)

<https://www.vishay.com/ppg?62055> (SiZF5302DT)

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