Vishay Intertechnology 650 V and 1200 V SiC Schottky Diodes in SOT-227 Package Increase Efficiency in High Frequency Applications

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40 A to 240 A Dual-Diode and Single Phase Bridge Devices Offer Low Forward Voltage Drop Down to 1.36 V and QC Down to 56 nC

MALVERN, Pa., Jan. 29, 2025 (GLOBE NEWSWIRE) -- Vishay Intertechnology, Inc. (NYSE: VSH) today introduced 16 new 650 V and 1200 V silicon carbide (SiC) Schottky diodes in the industry-standard SOT-227 package. Designed to deliver high speed and efficiency for high frequency applications, the Vishay Semiconductors devices offer the best trade-off between capacitive charge (Q_C) and forward voltage drop for diodes in their class.

The devices released today consist of 40 A to 240 A dual diode components in a parallel configuration, and 50 A and 90 A single phase bridge devices. Built on state of the art thin wafer technology, the diodes feature a low forward voltage drop down to 1.36 V that dramatically reduces conduction losses for increased efficiency. Further increasing efficiency, the devices offer better reverse recovery parameters than Si-based diodes and have virtually no recovery tail.

Typical applications for the components will include AC/DC PFC and DC/DC ultra high frequency output rectification in FBPS and LLC converters for photovoltaic systems, charging stations, industrial UPS, and telecom power supplies. In these applications, the diodes' low Q_C down to 56 nC allows for high speed switching, while their industry-standard package offers a drop-in replacement for competing solutions.

The diodes deliver high temperature operation to +175 °C and a positive temperature coefficient for easy parallelling. UL-approved to file E78996, the devices feature a large creepage distance between terminals and a simplified mechanical design for rapid assembly.

Device Specification Table:

Part Number	V_R (V)	$I_{F(AV)}$ (A)	V_F at I_F (V)	I_{FSM} (A)	Q_C (nC)	Configuration
VS-SC40FA65	650	40	1.36	105	56[1]	Two separate diodes, parallel pin-out
VS-SC80FA65		80	1.36	225	110[1]	Two separate diodes, parallel pin-out
VS-SC120FA65		120	1.39	340	164[1]	Two separate diodes, parallel pin-out
VS-SC160FA65		160	1.38	450	220[1]	Two separate diodes, parallel pin-out
VS-SC200FA65		200	1.39	555	275[1]	Two separate diodes, parallel pin-out
VS-SC240FA65		240	1.40	675	328[1]	Two separate diodes, parallel pin-out
VS-SC50BA65		50	1.50	267	110[1]	Single phase bridge
VS-SC90BA65		90	1.61	340	164[1]	Single phase bridge
VS-SC40FA120	1200	40	1.39	130	112[2]	Two separate diodes, parallel pin-out
VS-SC80FA120		80	1.4	260	224[2]	Two separate diodes, parallel pin-out
VS-SC120FA120		120	1.42	385	333[2]	Two separate diodes, parallel pin-out
VS-SC160FA120		160	1.44	500	444[2]	Two separate diodes, parallel pin-out
VS-SC200FA120		200	1.45	620	553[2]	Two separate diodes, parallel pin-out
VS-SC240FA120		240	1.45	690	651[2]	Two separate diodes, parallel pin-out
VS-SC50BA120		50	1.5	328	223[2]	Single phase bridge
VS-SC90BA120		90	1.9	500	332[2]	Single phase bridge

[1] V_R = 400 V
[2] V_R = 800 V

Samples and production quantities of the new SiC diodes are available now, with lead times of 18 weeks.

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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