Vishay Intertechnology Gen 3 650 V and 1200 V SiC Schottky Diodes Increase Efficiency While Enhancing Electrical Insulation

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Offered in the Compact SlimSMA HV (DO-221AC) Package, 1 A and 2 A Devices Offer Low Capacitive Charge and High Minimum Creepage Distance of 3.2 mm

MALVERN, Pa., July 09, 2025 (GLOBE NEWSWIRE) -- Vishay Intertechnology, Inc. (NYSE: VSH) today introduced three new Gen 3 650 V and 1200 V silicon carbide (SiC) Schottky diodes in the compact, low profile SlimSMA HV (DO-221AC) package. Featuring a merged PIN Schottky (MPS) design and minimum creepage distance of 3.2 mm, the 1 A VS-3C01EJ12-M3 and 2 A VS-3C02EJ07-M3 and VS-3C02EJ12-M3 combine low capacitive charge with temperature-invariant switching behavior to increase efficiency in high speed, hard-switching power designs.

For high voltage applications, the high creepage distance of the Vishay Semiconductors devices released today provides improved electrical isolation, while their SlimSMA HV package features a molding compound with a high CTI ≥ 600 to ensure excellent electrical insulation. For space-constrained designs, the diodes offer a low profile of 0.95 mm compared to 2.3 mm for competing SMA and SMB packages with a similar footprint.

Unlike silicon diodes, the VS-3C01EJ12-M3, VS-3C02EJ07-M3, and VS-3C02EJ12-M3 maintain a low capacitive charge down to 7.2 nC irrespective of temperature, resulting in faster switching speeds, reduced power losses, and improved efficiency for high frequency applications. In addition, the devices have virtually no recovery tail, which further improves efficiency, while their MPS structure delivers a reduced forward voltage drop down to 1.30 V.

With a high operating temperature of +175 °C, typical applications for the VS-3C01EJ12-M3, VS-3C02EJ07-M3, and VS-3C02EJ12-M3 will include bootstrap, anti-parallel, and PFC diodes for DC/DC and AC/DC converters in server power supplies; energy generation and storage systems; industrial drives and tools; and X-ray generators. For easy paralleling in these applications, the devices offer a positive temperature coefficient.

RoHS-compliant and halogen-free, the diodes feature a Moisture Sensitivity Level of 1 in accordance with J-STD-020 and meet the JESD 201 class 2 whisker test.

Device Specification Table:

Part #	VS-3C01EJ12-M3	VS-3C02EJ07-M3	VS-3C02EJ12-M3
I_F (A)	1	2	2
V_R (V)	1200	650	1200
V_F at I_F (V)	1.35	1.30	1.35
I_R at V_R at 175 C (µA)	4.5	2.0	5.0
Q_C (nC)	7.5	7.2	13
Configuration	SlimSMA HV (DO-221AC)		
Package	Single		

Samples and production quantities of the new SiC diodes are available now, with lead times of 14 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 1000 Company listed on the NYSE (VSH). More on Vishay at www.Vishay.com.

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Links to datasheets:
http://www.vishay.com/ppg?97284 (VS-3C01EJ12-M3)
http://www.vishay.com/ppg?97287 (VS-3C02EJ07-M3)
http://www.vishay.com/ppg?97286 (VS-3C02EJ12-M3)

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