Vishay Intertechnology Releases New 1 A and 2 A Gen 7 1200 V FRED Pt® Hyperfast Rectifiers in SlimSMA HV (DO-221AC) Package

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Reducing Switching Losses and Increasing Efficiency, Devices Combine Low Q_{rr} Down to 105 nC With V_F Down to 1.45 V and Low Junction Capacitance and Recovery Time

MALVERN, Pa., Sept. 24, 2025 (GLOBE NEWSWIRE) -- Vishay Intertechnology, Inc. (NYSE: VSH) today expanded its Gen 7 platform of 1200 V FRED Pt® Hyperfast rectifiers with four new devices in the eSMP® series SlimSMA HV (DO-221AC) package. Optimized for industrial and automotive applications, the 1 A and 2 A rectifiers not only offer the best trade-off between reverse recovery charge (Q_{rr}) and forward voltage drop for devices in their class, but also provide the lowest junction capacitance and recovery time.

The Vishay Semiconductors rectifiers released today include the VS-E7JX0112-M3 and VS-E7JX0212-M3, and AEC-Q101 qualified VS-E7JX0112HM3 and VS-E7JX0212HM3. To reduce switching losses and increase efficiency, the devices combine fast recovery times down to 45 ns with Q_{rr} down to 105 nC typical, forward voltage drop down to 1.45 V, and junction capacitance down to 2.5 pF. The robust rectifiers offer non-repetitive peak surge current up to 21 A in a compact package measuring 2.6 mm by 5.2 mm with a low 0.95 mm profile, compared to 2.3 mm for the competing SMA package with a similar footprint. Combined with a minimum 3.2 mm creepage distance and molding compound with a comparative tracking index (CTI) ≥ 600 (Material Group I), the devices reduce component counts and lower BOM costs based on IEC 60664-1 requirements for high voltage applications.

The VS-E7JX0112-M3, VS-E7JX0112HM3, VS-E7JX0212-M3, and VS-E7JX0212HM3 will serve as clamp, snubber, and freewheeling diodes in flyback auxiliary power supplies and high frequency rectifiers for bootstrap driver functionality, while providing desaturation protection for the latest fast switching IGBTs and high voltage Si / SiC MOSFETs. Typical applications for the devices include industrial drives and tools, on-board chargers and motors for electric vehicles (EV), energy generation and storage systems, and Ćuk converters and industrial LED SEPIC circuitry.

The rectifiers feature a planar structure and platinum doped lifetime control that guarantee system reliability and robustness without compromising on performance, while their optimized stored charge and low recovery current minimize switching losses and reduce power dissipation. RoHS-compliant and halogen-free, the devices feature a Moisture Sensitivity Level of 1 in accordance with J-STD-020 and offer high temperature operation to +175 °C.

Device Specification Table:

Part number	VS-E7JX0112-M3	VS-E7JX0112HM3	VS-E7JX0212-M3	VS-E7FX0212HM3
$I_{F(AV)}$	1 A	1 A	2 A	2 A
V_R	1200 V			
V_F at I_F	1.45 V	1.45 V	1.60 V	1.60 V
t_{rr}	50 ns	50 ns	45 ns	45 ns
Q_{rr}	105 nC	105 nC	165 nC	165 nC
C_T	2.5 pF	2.5 pF	3.0 pF	3.0 pF
I_{FSM}	14 A	14 A	21 A	21 A
Package	SlimSMA HV (DO-221AC)			
AEC-Q101	No	Yes	No	Yes

Samples and production quantities of the new Gen 7 rectifiers are available now, with a lead time of eight 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?97319 (VS-E7JX0112-M3)
http://www.vishay.com/ppg?97246 (VS-E7JX0112HM3)
http://www.vishay.com/ppg?97318 (VS-E7JX0212-M3)
http://www.vishay.com/ppg?97106 (VS-E7JX0212HM3)

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