1 A and 2 A Gen 7 1200 V FRED Pt® Hyperfast Rectifiers in SlimSMA HV (DO-221AC) Package Reduce Switching Losses and Increase Efficiency With Low Q_{rr} Down to 105 nC, V_F Down to 1.45 V, and Low Junction Capacitance and Recovery Time

Product Benefits:

- Offered in SlimSMA HV (DO-221AC) package
- AEC-Q101 qualified (VS-E7JX0112HM3 and VS-E7JX0212HM3)
- Fast recovery times down to 45 ns
- Comparative tracking index (CTI) ≥ 600 (Material Group I)
- Low Q_{rr} down to 105 nC typical
- Low forward voltage drop down to 1.45 V
- Low junction capacitance down to 2.5 pF
- High temperature operation to +175 °C
- Moisture Sensitivity Level of 1 in accordance with J-STD-020
- RoHS-compliant and halogen-free

Market Applications:

- Clamp, snubber, and freewheeling diodes in flyback auxiliary power supplies and high frequency rectifiers for bootstrap driver functionality
- Desaturation protection for the latest fast switching IGBTs and high voltage Si / SiC MOSFETs
- 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 News:

Vishay Intertechnology expands 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 they also provide the lowest junction capacitance and recovery time.

- 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 VS-E7JX0112-M3, VS-E7JX0112HM3, VS-E7JX0212-M3, and VS-E7JX0212HM3 reduce component counts and lower BOM costs based on IEC 60664-1 requirements for high voltage applications
- The devices 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

© 2025 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED.

The Key Specifications:

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

Availability:
Samples and production quantities of the new Gen 7 rectifiers are available now, with a lead time of eight weeks.

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

Contact Information:

The Americas
Diodes-Americas@vishay.com

Europe
Diodes-Europe@vishay.com

Asia/Pacific
Diodes-Asia@vishay.com

© 2025 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED.