



The DNA of tech.®

1200 V FRED Pt[®] Hyperfast Rectifiers in SMPC HV Package

Reducing Switching Losses and Increasing Efficiency, Fast Recovery Time, and Large Creepage Distance



ADVANTAGE

Combine low Q_{rr} down to 105 nC and V_F down to 1.45 V with low junction capacitance

KEY PRODUCT FEATURES

- ✓ Forward current of 1 A, 2 A, and 3 A
- ✓ Minimum 5.4 mm creepage distance
- ✓ Low junction capacitance down to 7.25 pF (4 V, 1 MHz)
- ✓ Compact low profile package (4.3 mm x 6.5 mm x 1.1 mm)
- ✓ Non-repetitive peak surge current up to 70 A
- ✓ SMPC HV package with CTI \geq 600 (Material Group I) for high voltage applications



MARKETS AND APPLICATIONS



MOBILITY

- Automotive electrification (e-powertrain)
- Transportation
- Agricultural equipment



ENERGY SECTOR

- Generation and exploration
- Storage



INDUSTRIAL

- Drives and tools
- Infrastructure

RESOURCES



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ADDITIONAL BENEFITS

- The devices 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
- The rectifiers feature a planar structure and platinum doped lifetime control that guarantee system reliability and robustness without compromising on performance

SPECIFICATIONS

Part number	I _{F(AV)} (A)	V _R (V)	V _F at I _F (V)	t _{rr} (ns)	Q _{rr} (nC)	C _T (pF)	I _{FSM} (A)	Package	AEC-Q101
VS-E7SX0112-M3V	1	1200	1.45	50	105	7.25	19	SMPC HV	No
VS-E7SX0112HM3V	1		1.45		105	7.25	19		Yes
VS-E7SX0212-M3V	2		1.6		165	9	21		No
VS-E7SX0212HM3V	2		1.6		165	9	21		Yes
VS-E7SX0312-M3V	3		1.45		240	20	70		No
VS-E7SX0312HM3V	3		1.45		240	20	70		Yes