Vishay Intertechnology, Inc.

FRED Pt® Gen 5 Hyperfast Rectifiers, 1200 V

1200 V, 30 A, **X-Type**, Optimized for **Extreme Switching Speed** and Low Q_{rr}, **TO-247AD 2L Package**

VS-E5PX3012L-N3

1200 V, 30 A, **X-Type**, Optimized for **Extreme Switching Speed** and Low Q_{rr}, **2L TO-220AC Package**

VS-E5TX3012-N3

1200 V, 30 A, **H-Type**, Optimized for **High Switching Speed**, Low V_F and Low Q_{rr}, **TO-247AD 2L Package**

VS-E5PH3012L-N3

1200 V, 30 A, **H-Type**, Optimized for **High Switching Speed**, Low V_F and Low Q_{rr}, **2L TO-220AC Package**

VS-E5TH3012-N3

1200 V, 60 A, **X-Type**, Optimized for **Extreme Switching Speed** and Low Q_{rr}, **TO-247AD 2L Package**

VS-E5PX6012L-N3

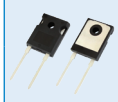
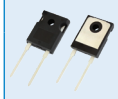
1200 V, 60 A, **H-Type**, Optimized for **High Switching Speed**, Low V_F and Low Q_{rr}, **TO-247AD 2L Package**

VS-E5PH6012L-N3

www.vishay.com

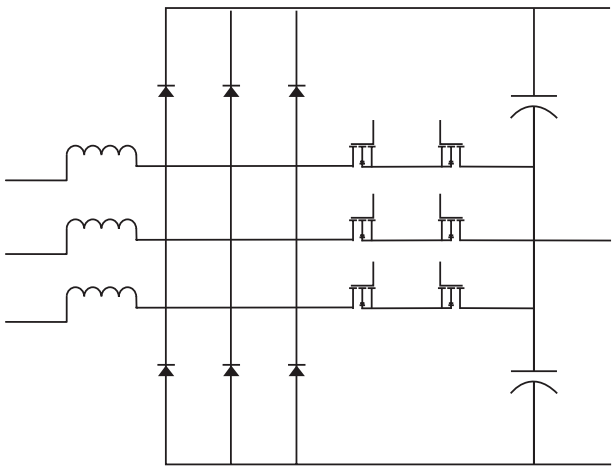
FRED Pt® GEN 5 HYPERFAST RECTIFIERS, 1200 V

Focus Products

Single Diode, 1200 V, 30 A Current Rating in TO-247AD 2L and 2L TO-220AC Packages									
Series		V_{CES} (V)	$I_{F(AV)}$ D = 0.5 (A)	At T_c (°C)	Speed Class	Typical V_F (V) T_J = 125 °C, I_F = 30 A	Typical Q_{rr} (nC) T_J = 125 °C, I_F = 20 A, V_R = 400 V, dI_F/dt = 600 A/µs	t_{rr} Class (ns) T_J = 25 °C, I_F = 1 A dI_F/dt = 100 A/µs, V_R = 30 V	Package
	VS-E5PX3012L-N3	1200	30	105	X	2.1	1550	26	TO-247AD 2L
	New FRED Pt® Gen 5 hyperfast rectifier; 1200 V; 30 A; X-type; optimized for extreme switching speed and low Q_{rr}; TO-247AD 2L package for best thermal performance								
	VS-E5TX3012-N3	1200	30	90	X	2.1	1550	26	2L TO-220AC
	New FRED Pt® Gen 5 hyperfast rectifier; 1200 V; 30 A; X-type; optimized for extreme switching speed and low Q_{rr}; TO-220 package for best value and small size								
	VS-E5PH3012L-N3	1200	30	115	H	1.7	2150	32	TO-247AD 2L
	New FRED Pt® Gen 5 hyperfast rectifier; 1200 V; 30 A; H-type; optimized for high switching speed; low V_F and low Q_{rr}; TO-247AD 2L package for best thermal performance								
	VS-E5TH3012-N3	1200	30	103	H	1.7	2150	32	2L TO-220AC
	New FRED Pt® Gen 5 hyperfast rectifier; 1200 V; 30 A; H-type; optimized for high switching speed; low V_F and low Q_{rr}; 2L TO-220AC package for best value and small size								

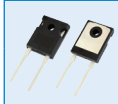
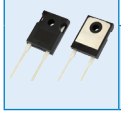
3-LEVEL T-TYPE PFC

Featuring a unique combination of low conduction and switching losses, these rectifiers are the right choice for high frequency converters, both hard switched and soft switched / resonant.



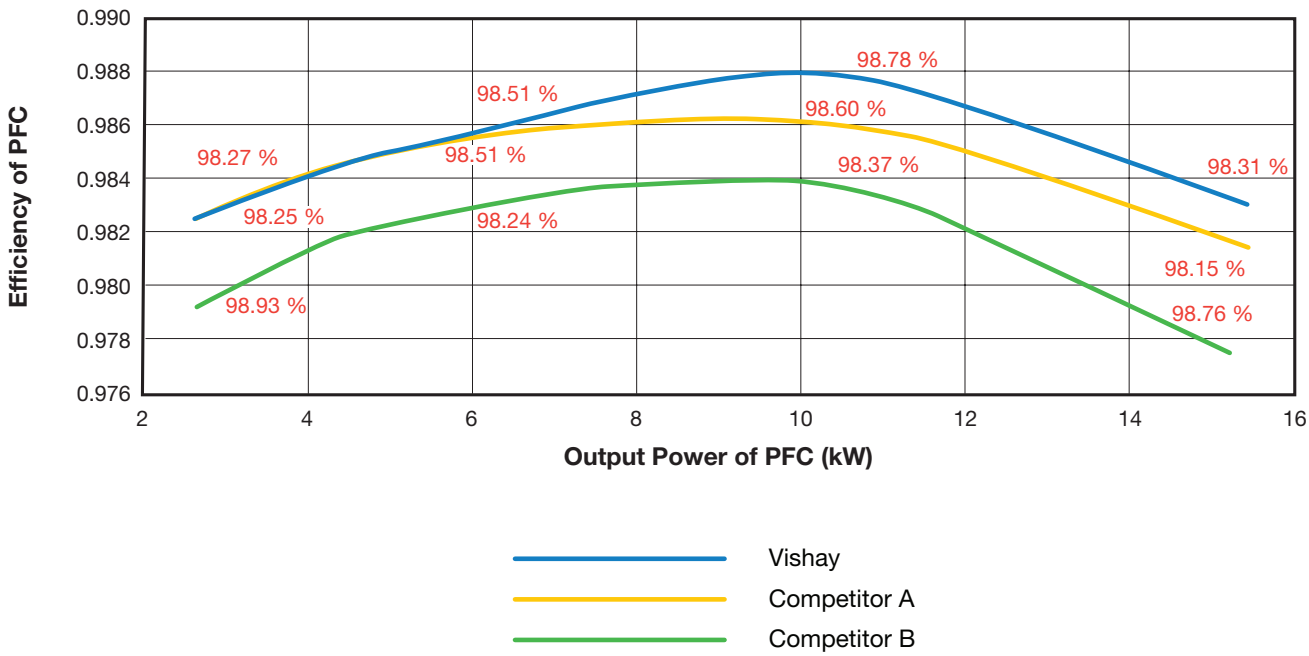
FRED Pt® GEN 5 HYPERFAST RECTIFIERS, 1200 V

Focus Products

Single Diode, 1200 V, 60 A Current Rating in TO-247AD 2L Package									
Series		V_{CES} (V)	$I_{F(AV)}$ D = 0.5 (A)	At T_c (°C)	Speed Class	Typical V_F (V) T_J = 125 °C, I_F = 60 A	Typical Q_{rr} (nC) T_J = 125 °C, I_F = 40 A, V_R = 400 V, dI_F/dt = 600 A/µs	t_{rr} Class (ns) T_J = 25 °C, I_F = 1 A dI_F/dt = 100 A/µs, V_R = 30 V	Package
	VS-E5PX6012L-N3	1200	60	105	X	2.1	2950	30	TO-247AD 2L
	New FRED Pt® Gen 5 hyperfast rectifier; 1200 V; 60 A; X-type; optimized for extreme switching speed and low Q_{rr}; TO-247AD 2L package for best thermal performance								
	VS-E5PH6012L-N3	1200	60	115	H	1.7	4080	38	TO-247AD 2L
	New FRED Pt® Gen 5 hyperfast rectifier; 1200 V; 60 A; H-type; optimized for high switching speed; low V_F and low Q_{rr}; TO-247AD 2L package for best thermal performance								

Specifically designed to improve the efficiency of PFC and output rectification stages of EV / HEV battery charging stations, the booster stage of solar inverters, and UPS applications, these devices are perfectly matched to operate with MOSFETs or high speed IGBTs.

EFFICIENCY OF PFC VS. OUTPUT POWER OF PFC AT 50 °C



FRED Pt® Gen 5 Hyperfast Rectifiers, 1200 V - **Designed for High Speed Performance in EV Chargers and UPS**

Advantages of FRED Pt® Gen 5 Hyperfast Rectifiers, 1200 V

- Best in class trade-off for low conduction losses and switching losses
- Designed to improve efficiency of hard and soft switching applications vs. competition
- Optimized for high speed operation
- 175 °C maximum operating junction temperature and polyimide passivation for enhanced reliability

For the Following **Applications**

- EV / HEV battery charging stations
- Booster stage of solar inverters and UPS

Useful **Links**

- 2L TO-220AC Package Drawing and Dimensions
  www.vishay.com/doc?96069
- TO-247AD 2L Package Drawing and Dimensions
  www.vishay.com/doc?95536
- FRED Pt® Ultrafast / Hyperfast Rectifiers Portfolio
  www.vishay.com/diodes/rectifiers/ultrafast-recovery/ultrafast-recovery-fred/

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