

New 200 V and 600 V FRED Pt[®] Hyperfast and Ultrafast Rectifiers

The News:

Vishay Intertechnology Releases 18 New 200 V and 600 V FRED Pt[®] Hyperfast and Ultrafast Rectifiers With Forward Currents From 4 A to 15 A and Low Forward Voltage Drop Down to 0.95 V in TO-252AA (D-PAK)

Vishay Intertechnology, Inc. (NYSE: VSH) introduces 18 new 200 V and 600 V FRED Pt[®] Hyperfast and Ultrafast rectifiers in the TO-252AA (D-PAK) power plastic SMD package with forward currents from 4 A to 15 A. The devices combine extremely fast recovery times with low forward voltage drops and reverse charges, and include the industry's first 600 V rectifiers in this package with forward currents greater than 10 A.

Product Features:

- Compact TO-252AA (D-PAK) power plastic SMD package
- Forward currents from 4 A to 15 A
 - 200 V devices are offered with 4 A, 8 A, and 10 A forward currents
 - 600 V devices provide 5 A, 6 A, 8 A, 12 A, and 15 A forward currents
 - 12 A and 15 A rectifiers offer industry's highest forward currents for this device type in the TO-252AA package
- Hyperfast "H" and "X" series and ultrafast "L" series offer a choice in speed and forward voltage performance
 - Low forward voltage drops from 0.95 V at 4 A for "L" series devices
 - Reverse recovery times start at 17 ns (at $I_F = 8$ A, $di/dt = 200$ A/ μ s, $V_R = 390$ V) for the "X" series
 - Reverse recovery charges start at 20 nC (at $I_F = 4/5$ A, $di/dt = 200$ A/ μ s, $V_R = 160$ V) for the "H" series
- Max operating junction temperature of + 175 °C for a more robust and cost-effective design
- Extremely low leakage current
- Compliant to RoHS Directive 2002/95/EC
- Halogen free according to the IEC 61249-2-21 definition
- MSL moisture sensitivity level of 1, per J-STD-020, LF maximum peak of + 260 °C





Key Specifications:

I _{F(AV)} (A)	Device	V _{RRM} (V)	Max V _F at I _F		Typ t _{rr} at 25 °C (ns)	Typ Q _{rr} at 25 °C (nC)	
			(V)	(A)		Setup (I _F , di _F /dt, V _R)	
4	VS-4EWH02FNx-M3 ⁽¹⁾	200	0.95	4	20	4 A, 200 A/us, 160 V	
5	VS-5EWL06FNx-M3 ⁽¹⁾	600	1.20	5	145	5 A, 200 A/us, 390 V	
5	VS-5EWH06FNx-M3 ⁽¹⁾	600	1.85	5	25	5 A, 200 A/us, 390 V	
5	VS-5EWX06FNx-M3 ⁽¹⁾	600	2.90	5	18	5 A, 200 A/us, 390 V	
6	VS-6EWL06FNx-M3 ⁽¹⁾	600	1.25	6	154	6 A, 200 A/us, 390 V	
6	VS-6EWH06FNx-M3 ⁽¹⁾	600	2.10	6	27	6 A, 200 A/us, 390 V	
6	VS-6EWX06FNx-M3 ⁽¹⁾	600	3.10	6	19	6 A, 200 A/us, 390 V	
8	VS-8EWL06FNx-M3 ⁽¹⁾	600	1.05	8	170	8 A, 200 A/us, 390 V	
8	VS-8EWH06FNx-M3 ⁽¹⁾	600	2.40	8	25	8 A, 200 A/us, 390 V	
8	VS-8EWX06FNx-M3 ⁽¹⁾	600	3.00	8	17	8 A, 200 A/us, 390 V	
8	VS-8CWH02FNx-M3 ⁽¹⁾	200	0.95	4	20	4 A, 200 A/us, 160 V	
8	VS-8EWH02FNx-M3 ⁽¹⁾	200	0.97	8	24	8 A, 200 A/us, 160 V	
10	VS-10CWH02FN-M3 ⁽¹⁾	200	0.98	5	21	5 A, 200 A/us, 160 V	
12	VS-12EWH06FNx-M3 ⁽¹⁾⁽²⁾	600	2.50	12	26	12 A, 200 A/us, 390 V	
15	VS-15AWL06FNx-M3 ⁽¹⁾⁽²⁾	600	1.05	15	220	15 A, 200 A/us, 390 V	
15	VS-15EWL06FNx-M3 ⁽¹⁾⁽²⁾	600	1.05	15	220	15 A, 200 A/us, 390 V	
15	VS-15EWH06FNx-M3 ⁽¹⁾⁽²⁾	600	2.10	15	36	15 A, 200 A/us, 390 V	
15	VS-15EWX06FNx-M3 ⁽¹⁾⁽²⁾	600	3.20	15	22	15 A, 200 A/us, 390 V	

⁽¹⁾x designates tube or tape & reel version on D2PAK products:

none = tube, **TR** tape & reel centered, **TRL** = tape & reel left oriented, **TRR** = tape & reel right oriented

⁽²⁾Industry first

Market Applications:

- The 4 A to 6 A devices are optimized for use as snubber diodes in lighting applications (either ballast or HID).
- The 8 A to 15 A devices are suitable for PFC boost and output diodes in telecom and desktop power supplies.

The Perspective:

Vishay's new 200 V and 600 V FRED Pt[®] Hyperfast and Ultrafast rectifiers feature forward currents from 4 A to 15 A in the compact TO-252AA (D-PAK) power plastic SMD package. The 12 A VS-12EWH06FNx-M3 and 15 A VS-15AWL06FNx-M3, VS-15EWL06FNx-M3, VS-15EWH06FNx-M3, and VS-15EWX06FNx-M3 offer the industry's highest forward currents for 600 V devices in the TO-252AA package. With their high power density, the rectifiers can replace larger SMD devices – such as those in the TO-263AB (D²PAK) package – in lighting, telecom, and desktop applications.

Part of Vishay's hyperfast "H" and "X" series and ultrafast "L" series, the rectifiers offer designers a choice in speed and forward voltage performance to meet the needs of their application. The rectifiers feature low forward voltage drops from 0.95 V at 4 A for "L" series devices. Reverse recovery times start at 17 ns for the "X" series, while reverse recovery charges start at 20 nC for the "H" series. The devices feature an



New Product Info



Product Group: Vishay Semiconductors, Rectifiers

improved chip design for increased reliability exceeding standard requirements for resistance to moisture and I_R stability over time.

To access the product datasheets on the Vishay Web site, go to

http://www.vishay.com/doc?93258	(VS-4EWH02FN-M3)
http://www.vishay.com/doc?93245	(VS-5EWH06FN-M3)
http://www.vishay.com/doc?93250	(VS-5EWL06FN-M3)
http://www.vishay.com/doc?93248	(VS-5EWX06FN-M3)
http://www.vishay.com/doc?93514	(VS-6EWH06FN-M3)
http://www.vishay.com/doc?93502	(VS-6EWL06FN-M3)
http://www.vishay.com/doc?93249	(VS-6EWX06FN-M3)
http://www.vishay.com/doc?93261	(VS-8CWH02FN-M3)
http://www.vishay.com/doc?93259	(VS-8EWH02FN-M3)
http://www.vishay.com/doc?93238	(VS-8EWH06FN-M3)
http://www.vishay.com/doc?93240	(VS-8EWL06FN-M3)
http://www.vishay.com/doc?93244	(VS-8EWX06FN-M3)
http://www.vishay.com/doc?93263	(VS-10CWH02FN-M3)
http://www.vishay.com/doc?93254	(VS-12EWH06FN-M3)
http://www.vishay.com/doc?93568	(VS-15AWL06FN-M3, VS-15EWL06FN-M3)
http://www.vishay.com/doc?93237	(VS-15EWH06FN-M3)
http://www.vishay.com/doc?93239	(VS-15EWX06FN-M3)