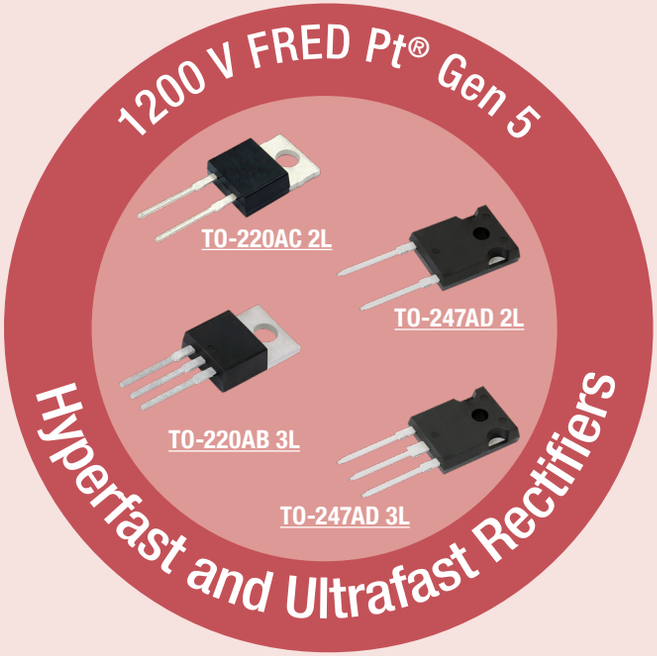
# 1200 V FRED Pt® Gen 5 Rectifiers

## in TO-220AC 2L, TO-247AD 2L, TO-220AB 3L, TO-247AD 3L Packages

- Reduced conduction and switching losses
- Hyperfast and optimized $Q_{rr}$
- High temperature operation to +175 °C
- Available in X-type hyperfast and H-type ultrafast speed classes
- Matched to operate with MOSFETs or high speed IGBTs
- **Current ratings from 8 A to 75 A**
- **Breakdown voltage of 1200 V**




## APPLICATIONS

**Three-phase T-type PFC and output rectification stages for EV / HEV battery charging stations, booster stages for solar inverters, and UPS and welding applications**

- SOLAR INVERTERS
- UPS
- EV / HEV BATTERY CHARGING STATIONS

## Non-Automotive Portfolio

| Part Number | $V_R$ (V) | $I_{F(AV)}$ (A) | $V_F$ Typ. (V) (1) | $Q_{rr}$ Typ. (nC) (2) | Speed Class | $t_{rr}$ Typ. (ns) (3) | Package |
|---|---|---|---|---|---|---|---|
| VS-E5TH0812-M3 | 1200 | 8 | 1.8 | 1350 | H | 33 | TO-220AC 2L |
| VS-E5TX0812-M3 | 1200 | 8 | 2.1 | 960 | X | 27 | TO-220AC 2L |
| VS-E5TH1512-M3 | 1200 | 15 | 1.7 | 1985 | H | 37 | TO-220AC 2L |
| VS-E5TX1512-M3 | 1200 | 15 | 2.1 | 1600 | X | 29 | TO-220AC 2L |
| VS-E5TH3012-M3 | 1200 | 30 | 1.7 | 3215 | H | 32 | TO-220AC 2L |
| VS-E5TX3012-M3 | 1200 | 30 | 2.1 | 2400 | X | 26 | TO-220AC 2L |
| VS-E5PH3012L-N3 | 1200 | 15 | 1.7 | 3215 | H | 32 | TO-247AD 2L |
| VS-E5PX3012L-N3 | 1200 | 15 | 2.1 | 2300 | X | 26 | TO-220AC 2L |
| VS-E5PX6012L-N3 | 1200 | 60 | 2.1 | 2950 | X | 30 | TO-247AD 2L |

| Part Number | $V_R$ (V) | $I_{F(AV)}$ (A) | $V_F$ Typ. (V) (1) | $Q_{rr}$ Typ. (nC) (2) | Speed Class | $t_{rr}$ Typ. (ns) (3) | Package |
|---|---|---|---|---|---|---|---|
| VS-E5PH6012L-N3 | 1200 | 60 | 1.7 | 4080 | H | 38 | TO-247AD 2L |
| VS-C5TH3012-M3 | 1200 | 30 (2 x 15) | 1.7 | 1985 | H | 37 | TO-220AB 3L |
| VS-C5TX3012-M3 | 1200 | 30 (2 x 15) | 2.1 | 1600 | X | 29 | TO-220AB 3L |
| VS-C5PH3012L-N3 | 1200 | 30 (2 x 15) | 1.7 | 1985 | H | 37 | TO-247AD 3L |
| VS-C5PX3012L-N3 | 1200 | 30 (2 x 15) | 2.1 | 1600 | X | 29 | TO-247AD 3L |
| VS-C5PH6012L-N3 | 1200 | 60 (2 x 30) | 1.7 | 3215 | H | 32 | TO-247AD 3L |
| VS-C5PX6012L-N3 | 1200 | 60 (2 x 30) | 2.1 | 2400 | X | 26 | TO-247AD 3L |
| VS-E5PH7512L-N3 | 1200 | 75 | 1.85 | 7100 | H | 40 | TO-247AD 2L |
| VS-E5PX7512L-N3 | 1200 | 75 | 2.3 | 5300 | X | 32 | TO-247AD 2L |

**Notes:** (1) $I_F$ = rated current, $T_J$ = 125 °C; (2) $T_J$ = 125 °C, $I_F$ = rated current A, $V_R$ = 1000 V, $dI_F/dt$ = 800 A/µs; (3) $T_J$ = 25 °C, $I_F$ = 1 A, $dI_F/dt$ = 100 A/µs, $V_R$ = 30 V

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