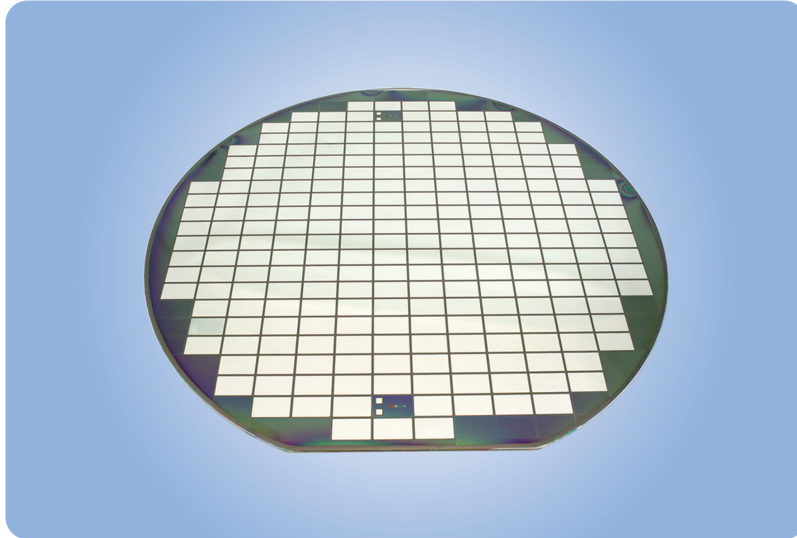




## DIODES

### FRED Pt<sup>®</sup> Gen 4 Ultrafast Rectifiers

#### 600 V and 650 V FRED Pt<sup>®</sup> Gen 4 Ultrafast Diodes Reduce Conduction Losses and Increase Efficiency



#### KEY BENEFITS

- FRED Pt<sup>®</sup> Gen 4 technology
- Designed for use with Vishay's trench insulated gate bipolar transistors (IGBT)
- Low  $I_{RRM}$  and reverse recovery charge
- Ultrasoft recovery in any switching conditions
- Ultra low forward voltage down to 1.4 V
- Ultrafast reverse recovery times down to 25 ns
- High operating temperature up to +175 °C

#### APPLICATIONS

- High frequency converters in power modules, motor drives, UPS, solar inverters, and welding machine inverters
- Single- and three-phase inverters, and full- and half-bridge DC/DC converters
- Power factor correction (PFC) circuits, boosters, choppers, and secondary-side rectification

#### RESOURCES

- Datasheets: for product information please visit [www.vishay.com/die-wafer/fred-die/](http://www.vishay.com/die-wafer/fred-die/)
- For technical questions contact: [die-wafer@vishay.com](mailto:die-wafer@vishay.com)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)





# DIODES

## FRED Pt<sup>®</sup> Gen 4 Ultrafast Rectifiers

The new FRED Pt<sup>®</sup> Gen 4 ultrafast recovery diodes provide the perfect complement to Vishay's recently introduced trench insulated gate bipolar transistors (IGBT). Together, the devices provide low EMI and plug and play reliability for single- and three-phase inverters, and full- and half-bridge DC/DC converters.

They also show efficient and reliable operation with major suppliers' state of the art IGBTs. The "H" and "U" series diodes can also be used as stand-alone components for PFC circuits, boosters, choppers, and secondary-side rectification.

Designed to minimize conduction losses in medium speed circuits, "U" series diodes feature extremely low forward voltage down to 1.4 V for 600 V devices. Optimized to deliver high speeds for higher frequency applications, "H" series diodes offer reverse recovery times down to 25 ns with low typical forward voltages down to 1.65 V for 600 V devices.

The Gen 4 diodes feature improved technologies in their active area and termination design – allowing for forward currents ranging from 12 A to 250 A in smaller die sizes than previous-generation devices – while their reduced thickness improves thermal impedance.

Part Number	Speed	V <sub>R</sub> (V)	I <sub>F(AV)</sub> (A)	V <sub>F</sub> max. at 25 °C (V)	t <sub>rr</sub> typ. at 25 °C (ns)	Maximum Temperature	Die Size (mils)	Die Thickness (mils)
VS-4FD081H06A6xC	H	600	12	1.47	25	175	81 x 81	10
VS-4FD081U06A6xC	U	600	12	1.34	32	175		10
VS-4FD121H06A6xC	H	600	20	1.46	31	175	121 x 96	10
VS-4FD121H07A6xC	H	650	20	1.49	31	175		10
VS-4FD121U06A6xC	U	600	20	1.26	37	175		10
VS-4FD121U07A6xC	U	650	20	1.29	36	175		10
VS-4FD156H06A6xC	H	600	30	1.41	33	175	156 x 102	10
VS-4FD156H07A6xC	H	650	30	1.46	33	175		10
VS-4FD156U06A6xC	U	600	30	1.23	37	175		10
VS-4FD156U07A6xC	U	650	30	1.33	38	175		10
VS-4FD198H06A6xC	H	600	50	1.45	39	175	198 x 132	10
VS-4FD198H07A6xC	H	650	50	1.59	39	175		10
VS-4FD198U06A6xC	U	600	50	1.28	45	175		10
VS-4FD198U07A6xC	U	650	50	1.39	44	175		10
VS-4FD236H06A6xC	H	600	75	1.36	31	175	236 x 163	10
VS-4FD236H07A6xC	H	650	75	1.41	31	175		10
VS-4FD236U06A6xC	U	600	75	1.26	85	175		10
VS-4FD236U07A6xC	U	650	75	1.32	84	175		10
VS-4FD282H06A6xC	H	600	100	1.43	70	175	282 x 174	10
VS-4FD282H07A6xC	H	650	100	1.52	70	175		10
VS-4FD282U06A6xC	U	600	100	1.3	85	175		10
VS-4FD282U07A6xC	U	650	100	1.42	85	175		10
VS-4FD335H06A6xC	H	600	150	1.57	79	175	335 x 208	10
VS-4FD335H07A6xC	H	650	150	1.66	80	175		10
VS-4FD335U06A6xC	U	600	150	1.43	95	175		10
VS-4FD335U07A6xC	U	650	150	1.52	94	175		10
VS-4FD378H06A6xC	H	600	200	1.41	83	175	378 x 238	10
VS-4FD378H07A6xC	H	650	200	1.54	83	175		10
VS-4FD378U06A6xC	U	600	200	1.31	100	175		10
VS-4FD378U07A6xC	U	650	200	1.4	98	175		10

### Note

- For V<sub>F</sub> max. at 25 °C, typ. V<sub>F</sub> at I<sub>R</sub>

单击下面可查看定价，库存，交付和生命周期等信息

[>>Vishay\(威世\)](#)