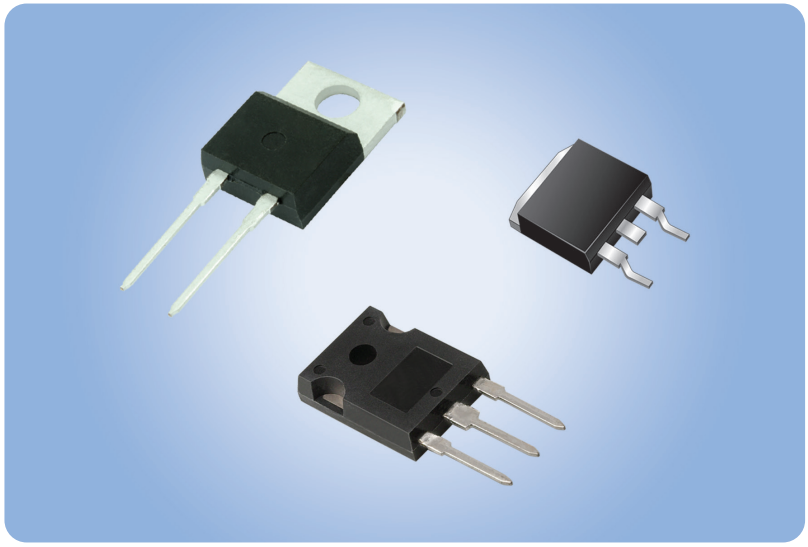
650 V FRED Pt® Gen 2 Ultrafast Diodes Reduce Switching Losses for Solar Inverters, UPS, Electric Vehicles, and Welding Machines



KEY BENEFITS

- Low forward voltage down to 1.38 V typical
- Fast reverse recovery times down to 30 ns at +25 °C
- Low reverse leakage current
- “H” family optimized for applications above 40 kHz
- “U” family available for applications up to 40 kHz
- Equivalent packaged bare die devices available upon request
- Wide range of rated currents from 2 A to 150 A
- Maximum operating junction temperature to +175 °C

APPLICATIONS

- Boost diodes, anti-parallel diodes to IGBTs, and output rectification in solar inverters, UPS, electric vehicles and hybrid electric vehicles, welding machines, servers, and CCM PFC

RESOURCES

- Datasheets: see next page for products
- For technical questions contact: die-wafer@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

A WORLD OF SOLUTIONS™

DIODES

FRED Pt® Ultrafast Diodes

The bare die devices combine their high blocking voltage capability with rated currents from 4 A to 150 A and a wide range of forward voltage vs. reverse recovery time ratios to reduce switching losses in solar inverters, UPS, electric and hybrid electric vehicles, and welding machines. The high blocking voltage capability of the Gen 2 FRED Pt® ultrafast diodes allows designers to provide additional safety margins and increase power density in end products.

PART NUMBER	DIE SIZE (mils)	CURRENT RATING (A)	VOLTAGE (V)	V_F AT RATED I [1] (V)	TYP. t_{RR} [2] (ns)	EQUIVALENT PACKAGE DEVICE AVAILABLE ON REQUEST
VS-FD111H07A6BN*	111 x 111	15 to 18	650	1.68	37	DPAK / D^2PAK / TO-220
VS-FD145H07A6xN*	145 x 145	30	650	1.7	39	D^2PAK / TO-220
VS-FD145W07A6xN*	145 x 145	30	650	2.2	26	
VS-FD184H07A6xN*	184 x 184	60	650	1.7	42	TO-247
VS-FD184W07A6xN*	184 x 184	60	650	2.3	38	
VS-FD310H07A6xN*	310 x 190	100 to 200	650	1.75	54	PowerTab®
VS-FD310W07A6xN*	310 x 190	100 to 200	650	2.2	47	
VS-FD394H07A6xN*	394 x 217	150	650	2.2	60	n/a

Notes

(1) Typical value at 25 °C

(2) Typical at 25 °C, 1 A, di/dt = 100 A/µs