Providing Improved Thermal Performance and Efficiency, 200 V Commercial and Automotive Grade FRED Pt® Ultrafast Rectifiers Deliver High Current Ratings Up to 15 A in New DFN6546A Package With a Low 0.88 mm Profile and Wettable Flanks

Product Benefits:

- Compact 6.5 mm x 4.6 mm DFN6546A package with wettable flanks and an extremely low typical height of 0.88 mm
- Current ratings from 6 A to 15 A
- Offered in commercial and AEC-Q101 qualified versions
- Single and dual devices available
- Low reverse leakage current
- Operate over a wide temperature range from -55 °C to +175 °C
- Low forward voltage drop of 0.75 V
- Fast reverse recovery time (t_{rr})
- Low reverse recovery charge (Q_{rr})
- Ideal for automated placement
- MSL moisture sensitivity level of 1, per J-STD-020, LF maximum peak of 260 °C
- RoHS-compliant and halogen-free
- Matte tin-plated leads meet the JESD 201 class 2 whisker test

Market Applications:

- High frequency inverters, DC/DC converters, freewheeling diodes, load dump protection, clamps and snubbers, reverse and series polarity protection, and LED backlighting
- Engine control units (ECU); LED lighting systems; advanced driver assistance (ADAS), lidar, and camera systems; and 48 V boardnets, chargers, and battery management systems (BMS) in electric (EV) and hybrid electric vehicles (HEV)
- Industrial automation equipment and tools, energy harvesting, consumer electronics and appliances, computers, and telecom and medical equipment

The News:

Vishay Intertechnology introduces 16 FRED Pt® ultrafast rectifiers in the new low profile DFN6546A package with wettable flanks. Providing space-saving, high efficiency solutions for commercial, industrial, and automotive applications, the 200 V devices provide current ratings from 6 A to 15 A and are available in commercial and Automotive Grade, AEC-Q101 qualified versions.

- The compact footprint and low profile of the DFN6546A – the latest package in Vishay's Power DFN family – allows the rectifiers to make more efficient use of PCB space
- The devices' optimized copper mass design and advanced die placement technology allow for superior thermal performance that enables operation at higher current ratings
- Compared to 200 V components in the SMPC (TO-277A) package with the same footprint, the rectifiers offer a 10 % lower profile and a 50 % higher current rating

- The devices' low forward voltage drop – combined with their fast reverse recovery time (t_{rr}) and low reverse recovery charge (Q_{rr}) – reduces power losses to improve efficiency
- The wettable flanks of the DFN6546A package allow for automatic optical inspection (AOI), eliminating the need for an X-ray inspection

The Key Specifications:

Part number	$I_{F(AV)}$ (A)	V_R (V)	I_{FSM} (A) per diode	V_F at I_F		T_J max. (°C)	Circuit configuration	AEC-Q101
				V_F (V)	I_F (A)			
VS-6ERH02-M3	6	200	120	0.75	6	175	Single	No
VS-6ERH02HM3	6	200	120	0.75	6	175	Single	Yes
VS-8ERH02-M3	8	200	131	0.75	8	175	Single	No
VS-8ERH02HM3	8	200	131	0.75	8	175	Single	Yes
VS-10ERH02-M3	10	200	134	0.75	10	175	Single	No
VS-10ERH02HM3	10	200	134	0.75	10	175	Single	Yes
VS-15ERH02-M3	15	200	264	0.75	15	175	Single	No
VS-15ERH02HM3	15	200	264	0.75	15	175	Single	Yes
VS-6CRH02-M3	2 x 3	200	66	0.75	3	175	Dual	No
VS-6CRH02HM3	2 x 3	200	66	0.75	3	175	Dual	Yes
VS-8CRH02-M3	2 x 4	200	70	0.75	4	175	Dual	No
VS-8CRH02HM3	2 x 4	200	70	0.75	4	175	Dual	Yes
VS-10CRH02-M3	2 x 5	200	77	0.75	5	175	Dual	No
VS-10CRH02HM3	2 x 5	200	77	0.75	5	175	Dual	Yes
VS-15CRH02-M3	2 x 7.5	200	124	0.75	7.5	175	Dual	No
VS-15CRH02HM3	2 x 7.5	200	124	0.75	7.5	175	Dual	Yes

Availability:
Samples and production quantities of the new FRED Pt ultrafast rectifiers in the DFN6546A package are available now, with lead times of eight weeks.

To access the product datasheet on the Vishay Website, go to
VS-6ERH02-M3 through VS-15ERH02HM3
VS-6CRH02-M3 through VS-15CRH02HM3

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