

FRED Pt® Ultrafast Rectifiers in DFN3820A Package With Wettable Flanks

1 A to 5 A, 200 V FRED Pt® Rectifiers Offer Space Savings, Improved Thermal Performance and Efficiency



ADVANTAGE



Power DFN design offers high current density and high efficiency capability with small and extremely low profile solutions.

KEY PRODUCT FEATURES

- ✓ Industry-first Power DFN3820A low profile package—small dimensions of 3.8 mm × 2.0 mm with typical height of 0.88 mm
- ✓ High efficiency and high current rating up to 5 A, more than double under thermal equilibrium conditions compared to SMP (DO-220AA)
- ✓ Wettable flanks for sidewall plating allow easy inspection with automated optical inspection (AOI), no X-ray necessary



MARKETS AND APPLICATIONS



MOBILITY

- Automotive
- Automotive electrification (e-powertrain) and intelligence (smart vehicle)
- Micro mobility



CONNECTIVITY

- Telecom mobile infrastructure
- Telecom fixed infrastructure



CONSUMER

- Entertainment
- Appliances



INDUSTRIAL

- Automation and infrastructure
- Drives and tools
- Home and building controls



MEDICAL

- Instrumentation
- Monitoring
- Therapeutics

RESOURCES



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ADDITIONAL BENEFITS

- Power DFN design offers high current density and high efficiency capability with small and extremely low profile solutions for commercial, industrial, and automotive applications
- The optimized inner structure design offers superior thermal performance, enabling the device to operate with much higher current ratings when compared to the SMP (DO-220AA) package with the same footprint

THE KEY SPECIFICATIONS

Part Number	I _{F(AV)} (A)	V _R (V)	I _{FSM} (A)	V _F at I _F and T _J			T _J max. (°C)	AEC-Q101
				V _F (V)	I _F (A)	T _J (°C)		
VS-1EAH02-M3	1	200	32	0.72	1	150	175	No
VS-1EAH02HM3	1	200	32	0.72	1	150	175	Yes
VS-2EAH02-M3	2	200	54	0.71	2	150	175	No
VS-2EAH02HM3	2	200	54	0.71	2	150	175	Yes
VS-3EAH02-M3	3	200	61	0.73	3	150	175	No
VS-3EAH02HM3	3	200	61	0.73	3	150	175	Yes
VS-5EAH02-M3	5	200	102	0.72	5	150	175	No
VS-5EAH02HM3	5	200	102	0.72	5	150	175	Yes

Vishay Intertechnology introduces four new series of 200 V FRED Pt® ultrafast rectifiers in the low profile DFN3820A package with wettable flanks. Providing space-saving, high efficiency solutions for commercial, industrial, and automotive applications, the 1 A VS-1EAH02xM3, 2 A VS-2EAH02xM3, 3 A VS-3EAH02xM3, and 5 A VS-5EAH02xM3 are each available in Automotive Grade, AEC-Q101 qualified versions.

- The first package in Vishay's new Power DFN family, the DFN3820A's compact footprint and low profile allow the VS-1EAH02xM3, VS-2EAH02xM3, VS-3EAH02xM3, and VS-5EAH02xM3 to make more efficient use of PCB space
- Compared to devices in the SMP (DO-220AA) package with the same footprint, the VS-1EAH02xM3, VS-2EAH02xM3, VS-3EAH02xM3, and VS-5EAH02xM3 offer a 12 % lower profile and more than double the current rating
- The devices' optimized copper mass design and advanced die placement technology allow for superior thermal performance that enables operation at higher current ratings
- The rectifiers offer equivalent or higher current ratings to larger devices in the conventional SMB (DO-214AA) and SMC (DO-214AB) packages, as well as the eSMP® series SlimSMA (DO-221AC), SlimSMAW (DO-221AD), and SMPC (TO-2778A)

INDUSTRY-FIRST POWER DFN—DFN3820A PACKAGE

