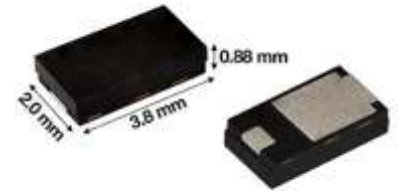




60 V, 100 V, and 150 V TMBS[®] Rectifiers Provide Improved Thermal Performance and Efficiency, Deliver High Current Ratings to 7 A in DFN3820A Package With Low 0.88 mm Profile and Wettable Flanks

Product Benefits:

- Offered in DFN3820A package with wettable flanks
 - Compact 3.8 mm by 2.0 mm footprint and an extremely low typical height of 0.88 mm
 - Wettable flanks allow for automatic optical inspection (AOI), eliminating the need for X-ray inspection
- AEC-Q101 qualified versions available
- High current ratings up to 7 A
- Available with voltages of 60 V, 100 V, and 150 V
- High temperature operation to +175 °C
- Best in class forward voltage drop down to 0.45 V reduces power losses to improve efficiency
- Ideal for automated placement
- MSL moisture sensitivity level of 1, per J-STD-020, LF maximum peak of 260 °C
- Matte tin-plated leads meet the JESD 201 class 2 whisker test
- RoHS-compliant and halogen-free



Market Applications:

- Low voltage, high frequency inverters, DC/DC converters, freewheeling diodes, snubbers, polarity protection, reverse current blocking, and LED backlighting
- Automotive applications including electronic controls for airbags, motors, and fuel pumps; 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)
- Energy generation, distribution, and storage
- Industrial automation equipment and tools
- Consumer electronics and appliances
- Notebooks and desktop computers
- Telecom equipment

The News:

Vishay Intertechnology introduces five new series of 60 V, 100 V, and 150 V surface-mount Trench MOS Barrier Schottky (TMBS[®]) rectifiers in the low profile DFN3820A package with wettable flanks. Providing space-saving, high efficiency solutions for commercial, industrial, energy, and automotive applications, the VxNL63-M3, VxNM63-M3, VxN103-M3, VxNM103-M3, and VxNM153-M3 each offer best in class current ratings up to 7 A, and are 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 VxNL63-M3, VxNM63-M3, VxN103-M3, VxNM103-M3, and VxNM153-M 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
- Current density is 50 % higher than the conventional SMA (DO-214AC) package, and 12 % higher than the SMF (DO-219AB)
- The rectifiers offer equivalent or higher current ratings to devices in the conventional SMA (DO-214AC) and SMB (DO-214AA) packages — which are 44 % and 60 % larger, respectively — and the eSMP® series SlimSMA (DO-221AC), which is 43 % larger

The Key Specifications:

Series	VxNL63-M3	VxNM63-M3	VxN103-M3	VxNM103-M3	VxNM153-M3	
$I_{F(AV)}$ (A)	2, 3, 5, 7	2, 3, 5, 7	2, 3, 5, 7	2, 3, 5, 7	2, 3, 5, 7	
V_R (V)	60	60	100	100	150	
I_{FSM} (A)	50 - 120	50 - 120	50 - 120	50 - 120	50 - 120	
V_F typ. (V) at	25 °C	0.5 - 0.52	0.58 - 0.59	0.6 - 0.64	0.63 - 0.67	0.85 - 0.9
	125 °C	0.45 - 0.48	0.5 - 0.64	0.54 - 0.57	0.55 - 0.58	0.62 - 0.64
I_R typ. (mA) at	125 °C	1.8 - 5	0.2 - 0.8	2.5 - 9	0.6 - 2.5	0.8 - 3
I_R max. (mA) at	25 °C	0.05 - 0.11	0.01 - 0.015	0.15 - 0.33	0.03 - 0.16	0.02 - 0.07
	125 °C	4 - 13	1 - 2.5	8 - 25	2 - 8	2 - 7
T_J max. (°C)	150	175	150	175	175	

Availability:

Samples and production quantities of the new TMBS rectifiers in the DFN3820A package are available now, with lead times of 12 weeks.

To access the product datasheets on the Vishay Website, go to

www.vishay.com/en/diodes/schottky/dfn-3820a/

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