

MDmesh V power MOSFETs

New high-voltage (650 V @ 25 °C) power MOSFET family featuring worldwide best $R_{DS(on)}$ * area



With its higher electrical efficiency, our new family of high-voltage (650 V @ 25 °C) power MOSFETs features the best $R_{DS(on)}$ * area on the market.

The improvement in $R_{DS(on)}$ achieved with MDmesh V significantly reduces losses in line-voltage PFC circuits and power supplies. This in turn enables new generations of electronic products offering greater energy savings, superior power density, and more compact applications. This new technology will help product designers tackle emerging challenges such as the high-efficiency targets of new eco-design directives, and will also benefit the renewable energy sector by saving vital watts normally lost in power-control modules.

Key features

- Worldwide best $R_{DS(on)}$ * area in TO-220, TO-220FP, I²PAK, D²PAK, DPAK, IPAK and TO-247 packages
- Fast switching
- Higher V_{DSS} rating
- High dv/dt capability
- Easy to drive
- 100% avalanche tested

Main applications

- SMPS (computers, very high efficiency adapters and telecom)
- Lighting (electronic ballast, HID)
- Displays (TVs, monitors)
- Solar converters

MDmesh V is a new silicon-based 650 V cutting-edge technology, which combines an innovative proprietary vertical technology and process with the company's well-known PowerMESH™ horizontal layout. This technology achieves up to 40% better $R_{DS(on)}$ versus the previous MDmesh II technology and establishes a new milestone in the power switch arena, becoming the world's best $R_{DS(on)}$ * area (with 650 V at 25 °C breakdown

voltage) in TO-220, TO-220FP, I²PAK, D²PAK, DPAK, IPAK and TO-247 packages. The fast switching and extremely low $R_{DS(on)}$ obtained via the MDmesh V yields elevated energy savings, fast switching, high electrical efficiency, more compact and superior high power density. As a result, the device is more reliable and long lasting for SMPS, solar-converter, lighting and display applications.

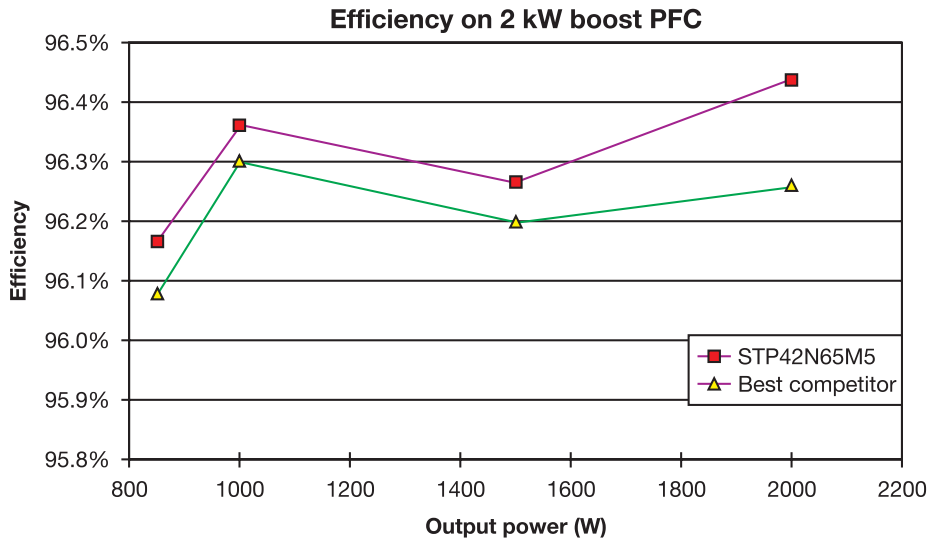


Fig. MDmesh V STP42N65M5 at the turn-off in 2 kW boost PFC

MDmesh V product range

V_{DSS} (V)	$R_{DS(on)}$ (max) (Ω)	Part number	I_d (A)	Package
650	0.022	STY112N65M5*	93	Max247
	0.038	STW77N65M5*	66	TO-247
	0.079	STx42N65M5	33	TO-220/TO-220FP/D ² PAK/I ² PAK/TO-247
	0.098	STx35N65M5*	27	TO-220/TO-220FP/D ² PAK/I ² PAK/TO-247
	0.119	STx32N65M5*	24	TO-220/TO-220FP/D ² PAK/I ² PAK/TO-247
	0.139	STx30N65M5*	21	TO-220/TO-220FP/D ² PAK/I ² PAK/TO-247
	0.179	STx21N65M5*	17.5	TO-220/TO-220FP/D ² PAK/I ² PAK/ TO-247
	0.299	STx16N65M5	12	TO-220/TO-220FP/DPAK/IPAK
	0.375	STx12N65M5*	9	TO-220/TO-220FP/DPAK/IPAK

* Samples available from Q2 2009



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