

# 600/650 V MDmesh™ M2

## ST's new super-junction HV MOSFET series



### MDmesh™ M2 uses ST's latest leading-edge, high-performance, superjunction MOSFET technology to boost efficiency in LED lighting applications

Design engineers can now increase the power density and improve thermal management efficiency of their LED lighting applications.

600 V MDmesh™ M2 devices target resonant-type supplies such as LLC or PFC boost converters, while the 650 V MDmesh™ M2 devices focus on fly-back converter topologies. For these kinds of applications, the MDmesh™ M2 series shows better efficiency thanks to its output capacitance profile that influences switching operations and the total performance of the system.

#### KEY FEATURES

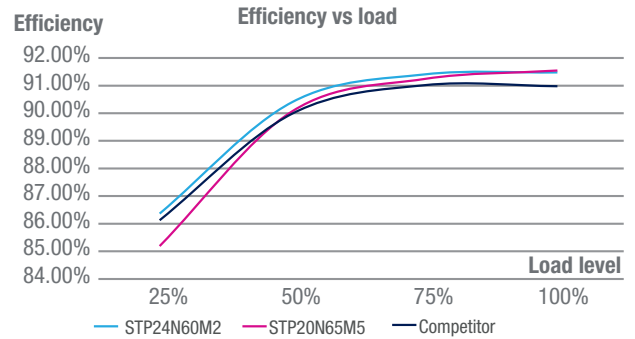
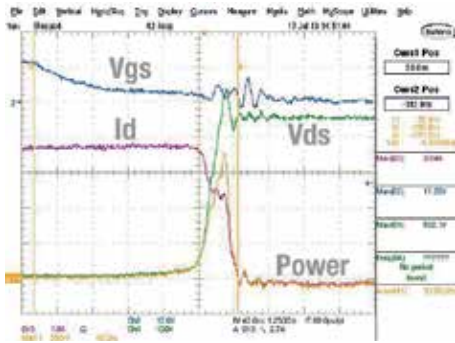
- Extremely low Qg
- Optimized for light load conditions
- From 500 V to 650 V  $BV_{DSS}$  rated
- Extremely low Qg
- Optimized output capacitance ( $C_{OSS}$ ) profile
- 600 V and 650 V  $BV_{DSS}$  rated
- 100% avalanche-tested
- Zener-protected

#### KEY BENEFITS

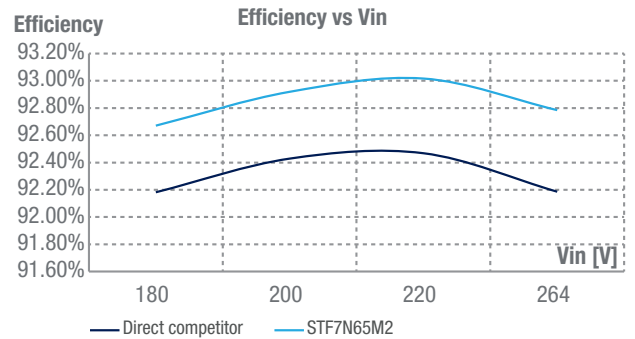
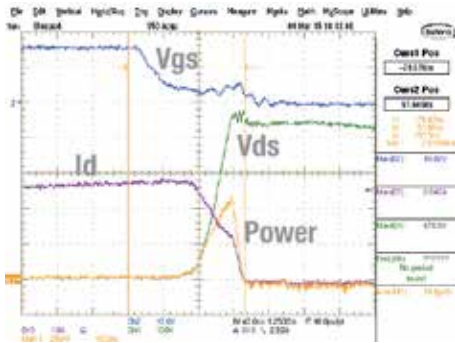
- Low conduction and switching losses in PFC (600 V  $BV_{DSS}$  rated) and flyback converter topologies (650 V  $BV_{DSS}$  rated)
- Easy to drive
- 600 V  $BV_{DSS}$  rated devices improve light load conditions in resonant topologies (LLC)



## 600 V MDmesh™ M2 SERIES: TURN-OFF OPERATION IN 130 W PFC AND EFFICIENCY DATA VS LOAD LEVEL



## 650 V MDmesh™ M2 SERIES: TURN-OFF OPERATION IN FLYBACK CONVERTER AND EFFICIENCY DATA VS INPUT VOLTAGE



## LIST OF AVAILABLE POWER TRANSISTORS BELONGING TO MDmesh™ M2 SERIES:

BV <sub>DSS</sub> (V)	Max R <sub>DS</sub> (Ω)	Max I <sub>D</sub> (A)	Qg (nC)	Sales Type	Packages
600 V	1.2	4.5	8	STx6N60M2	DPAK/D <sup>2</sup> PAK/IPAK/TO-220FP/TO-220AB
	0.95	5	8.8	STx7N60M2	DPAK TO-220/IPAK
	0.780/0.860*	5.5	8	STx9N60M2	IPAK/DPAK/TO-220/TO-220FP/PowerFLAT 5x6 HV
	0.6	7.5	13.5	STx10N60M2	DPAK/D <sup>2</sup> PAK/IPAK/TO-220FP/TO-220AB
	0.380/0.420*	11	16	STx13N60M2	IPAK/DPAK/D <sup>2</sup> PAK/TO-247/TO-220/TO-220FP/PowerFLAT 5x6 HV
	0.190/0.210*	18	29	STx24N60M2	TO-220/FP/D <sup>2</sup> PAK/I <sup>2</sup> PAK/TO-247/PowerFLAT 8x8 HV
650 V	1.8	2.3	5	STL3N65M2	PowerFLAT 3.3 x 3.3 HV
	1.25	4.0	6.5	STL8N65M2	PowerFLAT 5x6 HV
	1.15	5	9	STX7N65M2	DPAK/TO-220FP/TO-220/IPAK
	1.0	4.5	8	STL10N65M2	PowerFLAT 5x6 HV
	0.9	5	10	STx9N65M2	DPAK/TO-220FP/IPAK
	0.75	5	12.5	STL12N65M2	PowerFLAT 5x6 HV
	0.68	7	12.5	STx11N65M2	DPAK/IPAK/I <sup>2</sup> PAK/TO-220FP/TO-220AB
	0.550	6	14	STL12HN65M2	PowerFLAT 5x6 HV
	0.5	8	16.5	STx12N65M2	DPAK/TO-220FP
	0.43/0.475*	10	17	STx13N65M2	DPAK/TO220-FP/TO-220/IPAK/Power FLAT 5x6 HV
	0.23	16	29	STx24N65M2	D <sup>2</sup> PAK/TO-220FP/TO-220

Note: \* Value for PowerFLAT package

For complete MDmesh™ M2 product portfolio visit [www.st.com/mdmeshm2](http://www.st.com/mdmeshm2) or consult the APP ST-MOSFET-Finder



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