

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

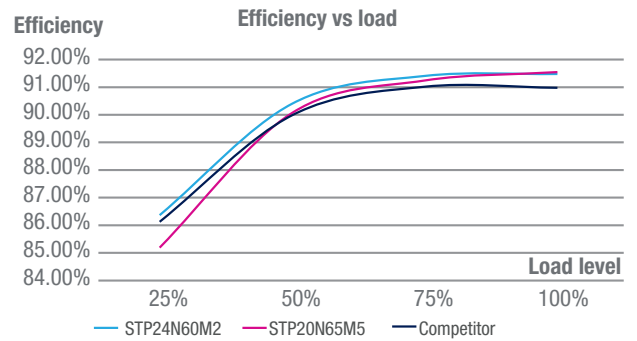
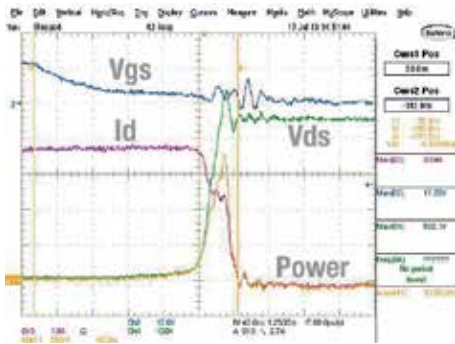
- Extremely low Qg
- Optimized for light load conditions
- From 500 to 650 BVdss rated
- Extremely low Qg
- Optimized output capacitance (COSS) profile
- 600 V and 650 V BVdss rated
- Available in slim I2PAKFP package
- 100% avalanche-tested
- Zener-protected

KEY BENEFITS

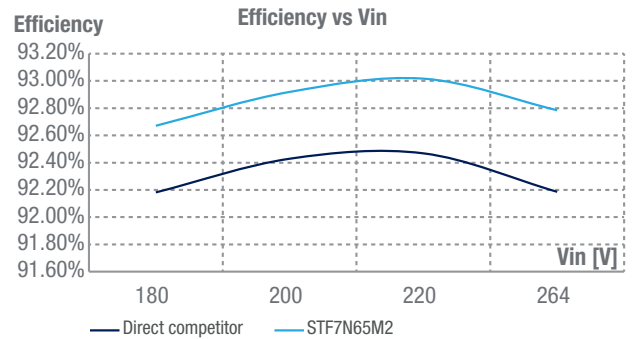
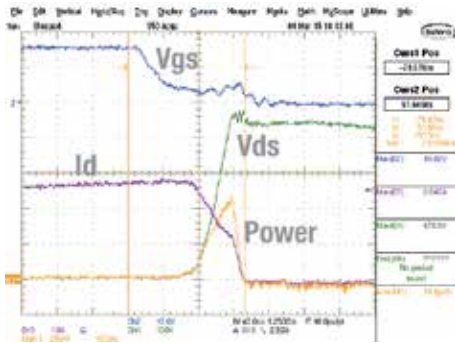
- Low conduction and switching losses in PFC (600 V BVdss rated) and flyback converter topologies (650 V BVdss rated)
- Easy to drive
- 600 V BVdss rated devices improve light load conditions in resonant topologies (LLC)



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 _{DSS} (V)	Max R _{DS} (Ω)	Max I _v (A)	Qg (nC)	Sales Type	Packages
600 V	1.2	4.5	8	STx6N60M2	DPAK/D ² 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/I ² PAKFP/PowerFLAT 5x6 HV
	0.6	7.5	13.5	STx10N60M2	DPAK/D ² PAK/IPAK/TO-220FP/TO-220AB
	0.380/0.420*	11	16	STx13N60M2	IPAK/DPAK/D ² PAK/TO-247/TO-220/TO-220FP/I ² PAKFP/PowerFLAT 5x6 HV
	0.190/0.210*	18	29	STx24N60M2	TO-220/FP/D ² PAK/I ² PAKFP/I2PAK/TO-247/PowerFLAT 8x8 HV
650 V	1.8	2.3	5	STL3N65M2	PowerFLAT 3.3 x 3.3 HV
	1.15	5	9	STX7N65M2	DPAK/TO-220FP/TO-220/IPAK
	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 ² PAK/TO-220FP/TO-220AB
	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 ² PAK/TO-220FP/TO-220

Note: * Value for PowerFLAT package

For complete MDmesh M2 product portfolio visit www.st.com/mdmeshm2 or consult the APP ST-MOSFET-Finder



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