

# STPOWER MOSFET MDmesh\* M2



## 600 to 650 V ST's super-junction HV MOSFET series



**MDmesh\* M2 uses ST's leading-edge, high-performance, super-junction STPOWER MOSFET technology to boost efficiency in LED lighting applications**

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

- 600 V and 650 V  $BV_{DSS}$  rated
- Extremely low  $Q_g$
- Optimized for light load conditions
- 100% avalanche-tested
- Zener-protected

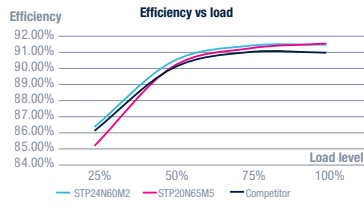
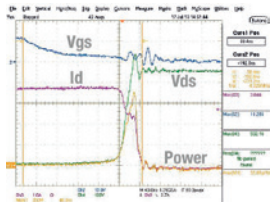
### KEY BENEFITS

- 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)

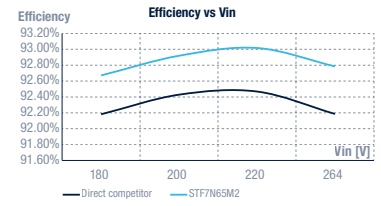
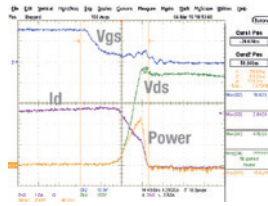
For complete MDmesh M2 product portfolio visit [www.st.com/mdmeshm2](http://www.st.com/mdmeshm2) or consult the APP ST-MOSFET-Finder



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>	R <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)****	Q <sub>g</sub>	Sales Type	Packages
600	1.4	3.5	8	STx5N60M2	DPAK/TO-220/TO-220FP
	1.2	4.5	8.2	STx6N60M2	DPAK/D <sup>2</sup> PAK/IPAK/TO-220FP/TO-220
	0.950	5	8.8	STx7N60M2	DPAK / TO-220FP/TO-220/IPAK/ PowerFLAT 5x5
	0.780/0.860*	5.5	10	STx9N60M2	IPAK/DPAK/TO-220/TO-220FP/PowerFLAT 5x6 HV
	0.600	7.5	13.5	STx10N60M2	DPAK/D <sup>2</sup> PAK/IPAK/TO-220FP/TO-220/PowerFLAT 5x6 HV
	0.495	9	16	STx12N60M2	DPAK/ IPAK/TO-220/ TO-220FP/PowerFLAT 5x6 HV
	0.380/0.420*	11	17	STx13N60M2	IPAK/DPAK/D <sup>2</sup> PAK/TO-247/TO-220/TO-220FP/PowerFLAT 5x6 HV
	0.320/0.355**	12	19	STx16N60M2	DPAK/ IPAK/TO-220/TO-220FP/PowerFLAT 5x6 HV
	0.280/0.308**	13	21.5	STx18N60M2/STL19N60M2	PowerFLAT 5x6 HV/D <sup>2</sup> PAK/TO-220/TO-220FP/TO-247 / PowerFLAT 8x8 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
	0.165	20	34	STx26N60M2	TO-220/FP/D <sup>2</sup> PAK/TO-247
	0.150/0.162**	22	36	STx28N60M2	PowerFLAT 8x8 HV/D <sup>2</sup> PAK/I <sup>2</sup> PAK/TO-220/TO-220FP/TO-247
	0.125/0.135**	26	45.5	STx33N60M2	PowerFLAT 8x8 HV/D <sup>2</sup> PAK/I <sup>2</sup> PAK/TO-220/TO-220FP/TO-247
	0.088	34	57	STx40N60M2	D <sup>2</sup> PAK/TO-3PF/TO-220FP/TO-220/TO-247/TO-247LL
	0.055	42	70	STx48N60M2	TO-247/TO-247LL/TO247-4
0.070	52	91	STx56N60M2	TO-247/TO247-4	
0.040	68	118	STW70N60M2	TO-247/TO247-4	
650	1.80	2.3	5	STL3N65M2	PowerFLAT 3.3 x 3.3 HV
	1.35	3.5	5.5	STx6N65M2	D <sup>2</sup> PAK/DPAK/IPAK/TO-220/TO-220FP
	1.25	4.0	6.5	STL8N65M2	PowerFLAT 5x6 HV
	1.15	4.5	6.5	STx7N65M2	DPAK/TO-220FP/TO-220/IPAK
	1.0	4.5*	8	STL10N65M2/STL9N65M2	PowerFLAT 5x6 HV/PowerFLAT 5x5
	0.900	5	8	STx9N65M2	DPAK/TO-220FP/TO-220/IPAK
	0.820	6	8.5	STx9HN65M2	TO-220FP/IPAK
	0.750	5*	12.5	STL12N65M2/STL11N65M2	PowerFLAT 5x6 HV/PowerFLAT 5x5
	0.680	7	12.5	STx11N65M2	DPAK/IPAK/TO-220/TO-220FP
	0.500	8	17	STx12N65M2	DPAK/TO-220FP/TO-220
	0.430/0.475*	10/6.5*	17	STx13N65M2	DPAK/TO220-FP/TO-220/PowerFLAT 5x6 HV
	0.360/0.395*	11/7.5*	19.5	STx16N65M2	DPAK/PowerFLAT 5x6 HV/I <sup>2</sup> PAK/TO-220/TO-220FP
	0.330/0.365*	14/8.5*	22	STx18N65M2	DPAK/PowerFLAT 5x6 HV/I <sup>2</sup> PAK/TO-220/TO-220FP
	0.230/0.250**	16/14*	29	STx24N65M2	PowerFLAT 8x8 HV/D <sup>2</sup> PAK/TO-220FP/TO-220
	0.180	20	35	STx28N65M2	D <sup>2</sup> PAK/TO-220/TO-220FP/ TO-247
	0.140/0.154	24/20**	14.5	STx33N65M2	PowerFLAT 8x8 HV/ D <sup>2</sup> PAK/TO-220FP/TO-220/I <sup>2</sup> PAK
	0.099	32	56.5	STx40N65M2	I <sup>2</sup> PAK/TO-220/TO-220FP/TO-247
	0.062	49	93	STx56N65M2	TO-247/TO247-4
0.046	63	117	STx70N65M2	TO-247	

\* Value for PowerFLAT 5x6 HV

\*\* Value for PowerFLAT 8x8 HV

\*\*\* Value not referred to PowerFLAT

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