

# STPOWER MOSFET MDmesh™ M6



## 600 to 700 V Super Junction MOSFETs to boost the efficiency



**MDmesh™ M6 technology offers improved PFC and LLC efficiency especially at light load conditions for increased power density**

Shrink your design and boost efficiency with the STPOWER MOSFET MDmesh™ M6 series.

Combining an optimized capacitance profile and low gate charge ( $Q_g$ ), the STPOWER MOSFET MDmesh™ M6 series is today's reference for resonant topologies.

Our new high-voltage, superjunction MDmesh™ M6 series opens the door to power converter designers for new scenarios targeting high efficiency and power density.

### KEY FEATURES

- Optimized threshold voltage for soft switching
- Extremely low  $Q_g$  and optimized capacitance profile for light load conditions
- Low gate charge for operation at high frequencies

### KEY BENEFITS

- Good switching behavior for hard and soft switching
- Extremely high efficiency performance to increase power density
- Targets high efficiency in new topologies for power conversion applications

### KEY APPLICATIONS

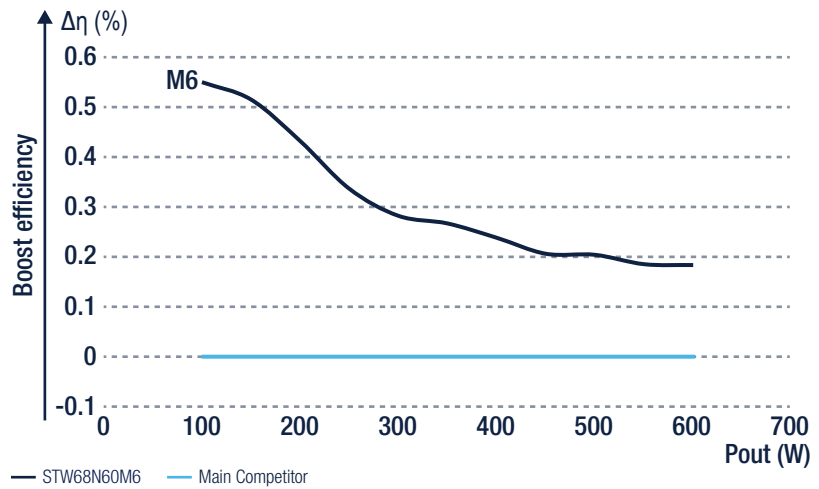
- Chargers
- Adapters
- Silver box modules
- LED lighting
- Telecom
- Servers
- Solar inverters

## MDmesh™ M6 SERIES

600 V - 650 V - 700 V BVdss rated

ST's latest super-junction technology optimized for resonant topologies. With a breakdown voltage ranging from 600 to 700 V, STPOWER MOSFETS MDmesh™ M6 are available in a wide range of package options including a TO-Leadless (TO-LL) package solution, allowing efficient thermal management.

## Efficiency test performed in open loop 700 W LLC system



## List of available power transistors in our high-voltage, super-junction MDmesh™ M6 series

V(BR) <sub>DSS</sub> (V)	R <sub>DS(on)</sub> (Ω)	I <sub>o</sub> (A)(****)	Part number	DPAK/IPAK/ D <sup>2</sup> PAK/P <sup>2</sup> PAK	Power FLAT 8x8 HV	Power FLAT 5x6 HV	TO-220	TO-220FP	TO-247			TO-LL
									Std	Long Lead	T0247-4	
600 V	0.900	5	STX7N60M6	•								
	0.750	TBD	STX9N60M6(*)	o								
	0.600	6.4	STX10N60M6	•		•						
	0.520	8	STX11N60M6(*)	o								
	0.450/ 0.490(**)	9	STX12N60M6	o		•						
	0.380 / 0.415(**)	10	STX13N60M6	•		•						
	0.320/0.350(**)	12	STX16N60M6 / STL17N60M6	•	•	•		•				
	0.280 / 0.308(**)	13	STX18N60M6 / STL19N60M6		•	•						
	0.230/0.250(**)	15	STX22N60M6	•	•	•	•	•				
	0.190/0.210 (**)	17	STX24N60M6	•	•	•	•	•	•			#
	0.125 /0.135 (**)	25	STX33N60M6	•	•	•	•	•	•	•		•
	0.099/0.110 (**)	30	STX36N60M6	•	•	•	•	•	•			•
	0.080	32	STX46N60M6	•			•	•				
	0.080(***)/0.082(**)	36	STX47N60M6		•							•
	0.069	39	STX48N60M6							•	•	•
0.049/ 0.054(****)	47	STX67N60M6										•
0.041	63	STX68N60M6								•		
0.036	72	STX75N60M6								•	•	•
650 V	1.5	3.5	STX3N65M6	•						•	•	•
	1.3	4	STX5N65M6	•				•				
	0.990	5	STX7N65M6	•				•				
700 V	1.400	3.5	STU5N70M6-S	•								

Note: • Active \* In development \*\* Referred to PowerFLAT \*\*\* Referred to TO-LL  
 \*\*\*\* Current value not referred to PowerFLAT and TO-LL o Available only in DPAK by Q2 2020 #Available by Q3 2020



To explore the complete MDmesh™ M6 product portfolio, visit [www.st.com](http://www.st.com) or use our ST-MOSFET-Finder mobile app for Android and iOS.



© STMicroelectronics - May 2020 - Printed in United Kingdom - All rights reserved  
 ST and ST logo are registered and/or unregistered trademarks of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere. In particular, ST and ST logo are Registered in the US Patent and Trademark Office.  
 For additional information about ST trademarks, please refer to [www.st.com/trademarks](http://www.st.com/trademarks).  
 All other product or service names are the property of their respective owners.

