

# 600 - 650 V MDmesh™ DM6 fast-recovery SJ MOSFETs boost efficiency and robustness



## MDmesh™ DM6 fast-recovery body diode technology improves efficiency and system reliability thanks to new lifetime killing process

Combining an optimized capacitance profile and lifetime killing process that results in a low gate charge ( $Q_g$ ), very low recovery charge ( $Q_{rr}$ ), low recovery time ( $t_{rr}$ ) and an excellent improvement in  $R_{DS(on)}$  per area, the MDmesh™ DM6 MOSFET series is today's reference for full- and half-bridge topologies.

Thanks to our new MDmesh™ DM6 series, power electronic designers are now ready for new scenarios targeting higher efficiency and very impressive power density for super robust power conversion topologies.

### KEY FEATURES

- Extremely low  $R_{DS(on)}$  \*area and  $Q_g$  and optimized capacitance profile for light load conditions
- 600 - 650 V BVdss rated
- Extremely high dv/dt
- Optimized body diode recovery phase
- Optimized softness

### KEY BENEFITS

- Extremely high efficiency performance and increased power density
- More robust power conversion in ZVS, full and half bridge topologies
- Higher operation frequencies and better thermal management

### KEY APPLICATIONS

- Charging stations for electric vehicles
- LED lighting
- Telecom
- Servers
- Solar inverters

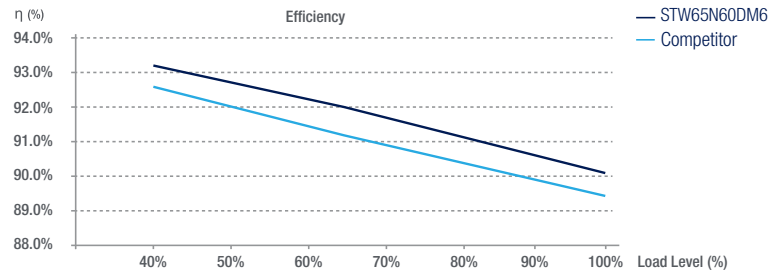
- Reduced EMI

## MDmesh™ DM6 SERIES

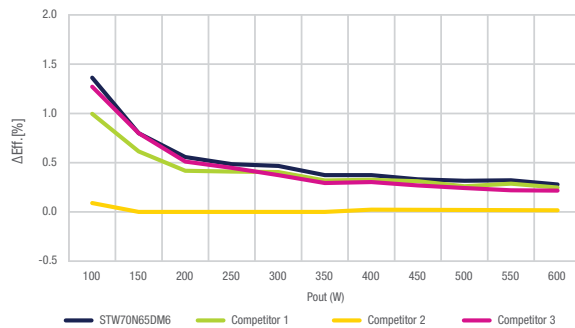
### 600 - 650 V BVdss rated

ST's latest fast-recovery body diode super-junction MOSFET technology is optimized for ZVS, full- and half-bridge topologies. With a breakdown voltage of 600 V, MDmesh™ DM6 power MOSFETs are available in a wide range of package options including a TO-Leadless (TO-LL) package solution, allowing efficient thermal management.

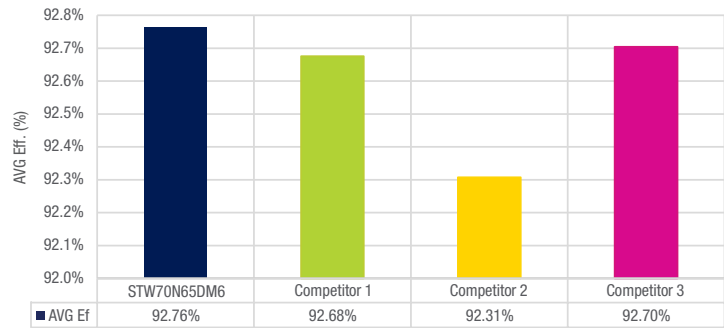
Efficiency test performed on 2 kW ZVS topology



Δefficiency respect Competitor 2



Average efficiency



## AVAILABLE POWER TRANSISTORS IN OUR HIGH-VOLTAGE, SUPER-JUNCTION 600 - 650 V MDmesh™ DM6 SERIES

MDmesh™ DM6 Product Plan											
R <sub>DS(on)</sub> (Ω)	Id max (A)	Qg (nC)	trr (ns)	D <sup>2</sup> PAK	PowerFLAT	TO-220	TO-220FP	TO-247			TO-LL
					8x8 HV			Standard	Long Lead	Kelvin Pin	
0.240 0.255**	15	18	85	STB22N60DM6	STL22N60DM6	STP22N60DM6	STF22N60DM6				
0.195 0.210**	18	23	92		STL26N60DM6	STP26N60DM6	STF26N60DM6				
0.128 0.140**	25	35	100	STB33N60DM6	STL33N60DM6	STP33N60DM6	STF33N60DM6				
0.095 0.100**	30	44	105		STL45N60DM6	STP45N60DM6		STW45N60DM6			
0.071	38	61	115					STW65N60DM6	STWA65N60DM6		STO65N60DM6*
0.054	48	80	124						STWA67N60DM6*		STO67N60DM6*
0.042	62	106	138					STW70N60DM6	STWA70N60DM6	STW70N60DM6-4	
0.036	72	117	140					STW75N60DM6	STWA75N60DM6		
0.091	33	54	118	STB50N65DM6		STP50N65DM6		STW50N65DM6			
0.059	48	80	128					STW68N65DM6*	STWA68N65DM6*		
0.039	68	115	160					STW70N65DM6	STWA70N65DM6		

Note: \* In development

\*\* Referred to PowerFLAT™



To explore the complete MDmesh™ DM6 product portfolio, visit [www.st.com](http://www.st.com) or use our ST-MOSFET-Finder mobile app for Android and iOS.



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