

600 - 650 V MDmesh™ DM6 Fast-recovery body diode SJ MOSFETs

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Efficiency and system reliability

MDmesh™ DM6 series is today the reference for full and half bridge topologies. The optimized capacity profile and a life-long killing process results in a low gate charge(Q_g), very low recovery charge(Q_r), and a low recovery time (T_r) but excellent improvement of the $R_{DS(on)}$ by area. The contribution of this new series turns its gaze towards new scenarios aiming at greater 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
- Reduced EMI

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

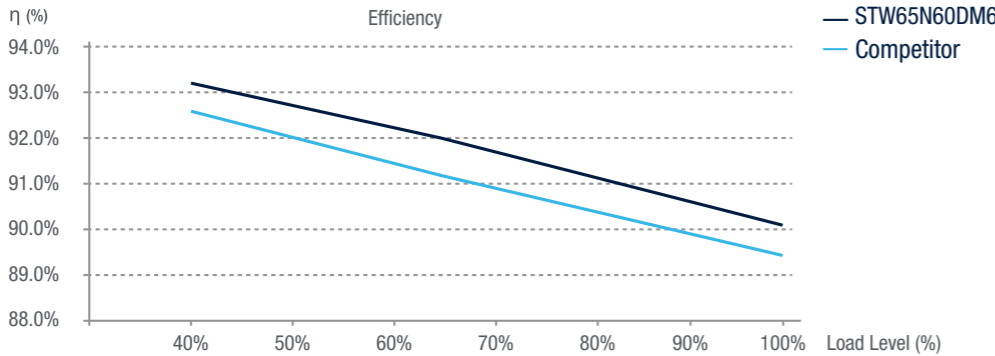
- Charging stations for electric vehicles
- LED lighting
- Telecom
- Servers
- Solar inverters

MDmesh DM6 series

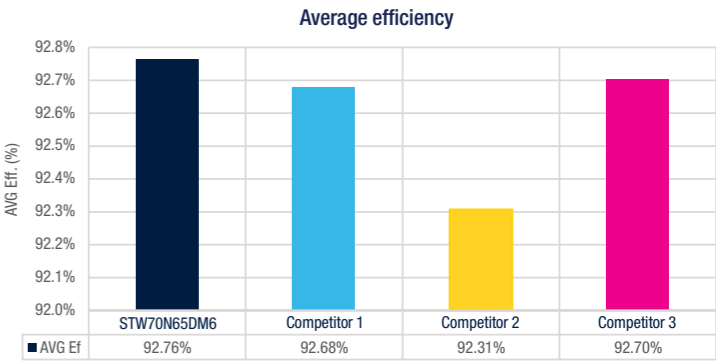
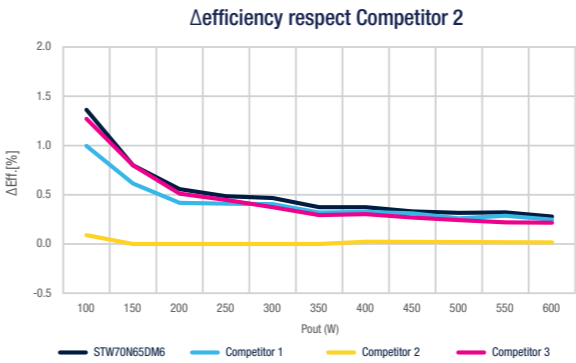
600 - 650 V BVDss rated

ST's latest fast-recovery body diode super-junction MOSFET technology is optimized for ZVS, full- and halfbridge topologies. With a breakdown voltage of 600 V - 650 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



Note: * is a registered and/or unregistered trademark of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere



V _{(BR)DSS} (V)	R _{DS(on)} (Ω)	ID (A)(****)	Qg	Trr(ns)	DPAK	D ² PAK	Power Flat 5x6 HV	Power Flat 8x8 HV	TO-220
600	0.39	10	12	TBD	STD12N60DM6				
	0.338/0.372(**)	12	15.3	85	STD15N60DM6		STL15N60DM6		
	0.240/0.255(**)	15	20.6	88		STB22N60DM6		STL22N60DM6	STP22N60DM6
	0.195/0.210 (**)	18	24	100		STB26N60DM6(*)		STL26N60DM6	STP26N60DM6
	0.128/0.140(**)	25	35	105		STB33N60DM6		STL33N60DM6	STP33N60DM6
	0.095/0.110(**)	30	44	110		STB45N60DM6(*)		STL45N60DM6	STP45N60DM6
	0.080	36	55	115		STB50N60DM6(*)			STP50N60DM6
	0.076/0.084(**)	45	52	134				STL52N60DM6	
650	0.080	33	52.5	130		STB50N65DM6			STP50N65DM6

Note: * In development, ** Referred to PowerFLAT, *** Referred to TO-LL, **** Current value not referred to PowerFlat and TO-LL

V _{(BR)DSS} (V)	R _{DS(on)} (Ω)	ID (A)(****)	Qg	Trr(ns)	TO-220FP	TO-247			TO-LL
						Standard	Long lead	TO247-4	
600	0.240	15	20.6	88	STF22N60DM6				
	0.195	18	24	100	STF26N60DM6				
	0.128	25	35	105	STF33N60DM6				
	0.095	30	44	110		STW45N60DM6			
	0.076	TBD	TBD	TBD					STO52N60DM6(*)
	0.071/0.078(**)	46	65	116		STW65N60DM6	STWA65N60DM6		STO65N60DM6
	0.054/0.059 (**)	58	72.5	125			STWA67N60DM6		STO67N60DM6
	0.042	62	99	138		STW70N60DM6	STWA70N60DM6	STW70N60DM6-4	
650	0.036	72	117	140		STW75N60DM6	STWA75N60DM6		
	0.091	33	52.5	130		STW50N65DM6			
	0.059/0.065(**)	55	80	135		STW68N65DM6	STWA68N65DM6		STO68N65DM6
	0.040	69	125	170		STW70N65DM6	STWA70N65DM6	STW70N65DM6-4	
	0.036	75	118	149			STWA75N65DM6	STW75N65DM6-4	

Note: * In development, ** Referred to TO-LL, *** Current value not referred to PowerFlat and TO-LL

