

STPOWER MOSFET MDmesh DM2



600 V ST's MOSFET series for motor control applications



Super-junction technology with fast recovery diode enables very high efficiency at low load for a better energy class

Based on ST's super-junction MOSFET technology combined with excellent switching performance, STPOWER MOSFET MDmesh DM2 devices show improved $R_{DS(on)}$ by up to 40% compared to previous versions.

The MDmesh DM2 fast recovery diode series offers excellent behavior in terms of turn-off energy (E_{off}), as well as a low gate charge, low input capacitance and its intrinsic diode shows very short recovery time.

KEY FEATURES

- BV_{DSS} : from 600 V
- Fast-recovery body diode
- Ultra-low gate charge (Q_g)
- Very low $R_{DS(on)}$

KEY BENEFITS

- Increased safety range & flexibility
- Excellent dynamic behavior
- Improved high load efficiency
- Lower conduction losses

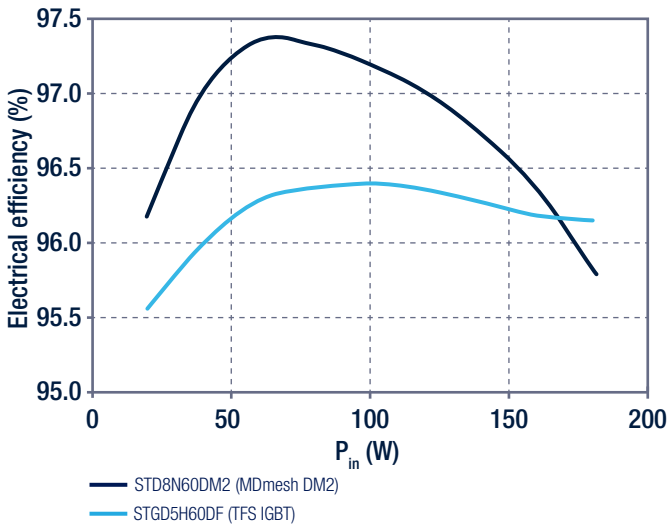
KEY APPLICATIONS

- Pumps
- Fridge compressors
- Kitchen hoods

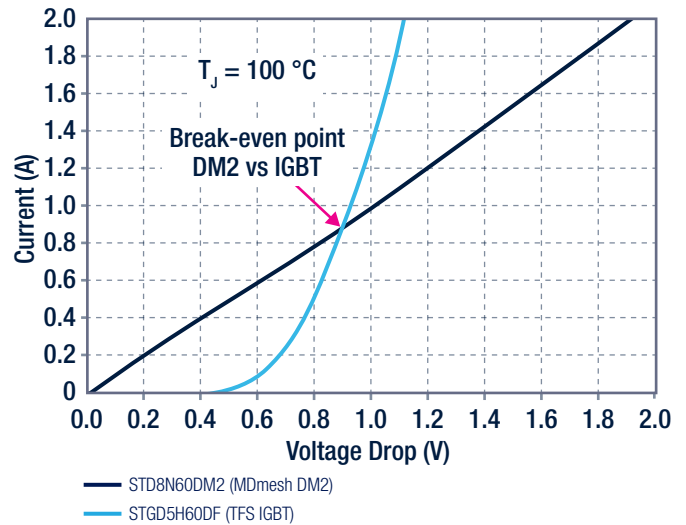
MDmesh DM2 VS COMPETITION

Note the significant improvement of energy efficiency (+1%) at low load of the STD8N60DM2 STPOWER MOSFET of the MDmesh DM2 fast recovery diode series compared to the trench-gate field-stop structure of the STGD5H60DF IGBT. The MDmesh DM2 MOSFET's linear static characteristics at low load ensure better performance than the TFS IGBT which is affected differently by the knee voltage effect.

Inverter electrical efficiency comparison as function of input power



Voltage drop comparison as function of current level @ T_j 100 °C



BV _{DSS} (V)	Part number	R _{DS(on)} (Ω) (@V _{GS} = 10 V)	Drain current (Dc)max (A)	Reverse recovery time(ns)	package
600	STD5N60DM2	1.55	3.5	70	DPAK
	STD6N60DM2	1.1	5	73	DPAK
	STD7N60DM2	0.9	6	75	DPAK
	STD8N60DM2	0.6	6	80	DPAK

Use our ST MOSFET Finder app for Android and iOS and find the best solution for your application. Includes an intuitive parametric search engine.



For a complete MDmesh DM2 product portfolio visit www.st.com/mdmeshdm2

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