

800 V MDmesh K6 STPOWER MOSFET



Latest ST very-high-voltage
superjunction technology



**MDmesh* K6 technology featuring industry-best on-resistance per area
enables higher power density and more compact solutions**

The STPOWER MDmesh K6 series sets a benchmark for 800 V superjunction technology, combining best-in-class performance that is remarkably easy to drive and control.

Thanks to its excellent $R_{DS(on)} \times \text{area}$, the new series enables higher power density for more compact system solutions.

This new very-high-voltage family is suitable for lightning applications like LED drivers, as well as for SMPS like adapters and chargers based on the flyback topology.

It is very effective in improving energy efficiency in power supplies for grow lights in horticultural and indoor gardening contexts.

KEY FEATURES AND BENEFITS

- Industry's best $R_{DS(on)}$ for 800 V
- High switching speed
- Lowest Q_g
- Higher power density for more compact designs
- High efficiency and easier design
- Lower power losses

KEY APPLICATIONS

- LED drivers
- Horticulture
- Adapters
- Chargers

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MDmesh K6 analysis

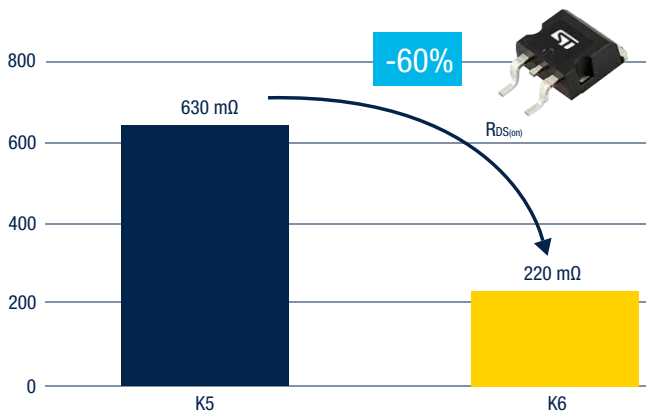


Figure 1: RDS(on) comparison between MDmesh K6 and MDmesh K5

One of the most significant features of the MDmesh K6 is the best-in-class RDS(on) in the DPAK package. This allows using SMD packages in place of through-hole packages to obtain more compact designs and reduce board height.

As shown in Figure 1, this new series achieves a 60% lower RDS(on) with respect to the previous technology in the same package solution.

An efficiency comparison between MDmesh K6, the previous K5 technology, and the best competitor was performed using a 100 W LED driver based on flyback topology. Figure 2 clearly shows the superior efficiency performance of the MDmesh K6 over the compared devices. This result is consistent with the energy during switching off (Eoff) and the case temperature (Tc) values reported in Table 1, referring to maximum load level of 100 W.

MDmesh K6 MOSFETs are available in a wide range of products and packages. Visit www.st.com/mdmesh-k6 for more details.

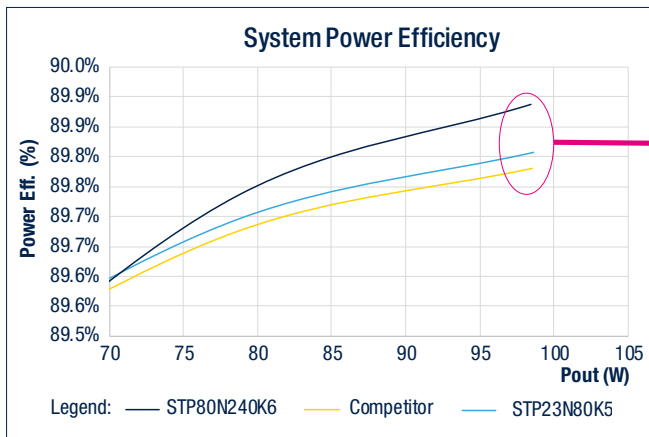


Figure 2: Efficiency comparison

Device	Eoff [μJ]	Tc [°C]
STP80N240K6	10.18	91
Competitor	11.32	97.6
STP23N80K5	10.42	97

Table 1: Results at maximum load

Find all MDmesh K6 series products here



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