

# 600 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
- 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
- Reduced EMI

### KEY APPLICATIONS

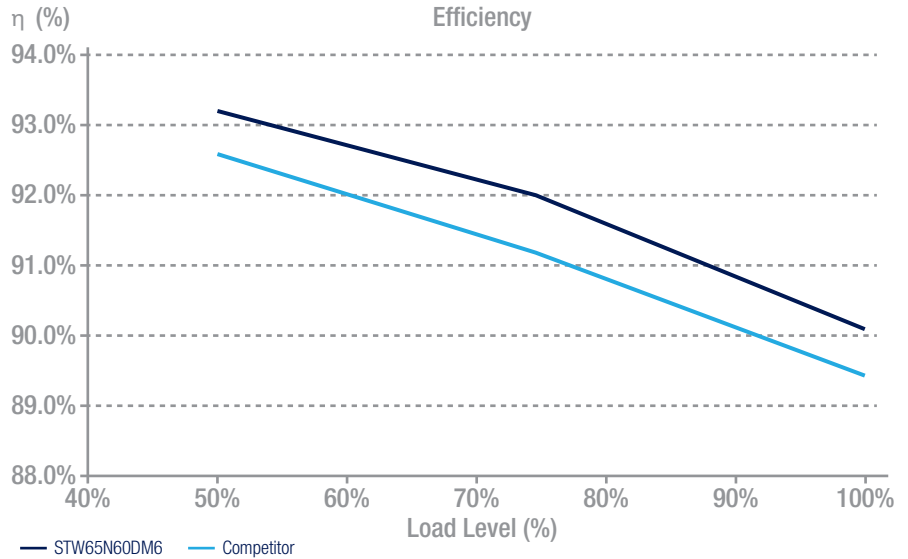
- Charging stations for electric vehicles
- LED lighting
- Telecom
- Servers
- Solar inverters

## MDmesh™ DM6 SERIES

### 600 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



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

| 600 V MDmesh™ DM6 Product Plan |                  |            |             |              |              |              |              |             |               |                |              |
|--------------------------------|------------------|------------|-------------|--------------|--------------|--------------|--------------|-------------|---------------|----------------|--------------|
| R <sub>DS(on)</sub><br>(Ω)     | Id<br>max<br>(A) | Qg<br>(nC) | trr<br>(ns) | D²PAK        | PowerFLAT    | TO-220       | TO-220FP     | TO-247      |               |                | TO-LL        |
|                                |                  |            |             |              | 8x8 HV       |              |              | Standard    | Long Lead     | Kelvin Pin     |              |
| 0.240<br>0.255**               | 15               | 18         | 85          | STB22N60DM6* | STL22N60DM6* | STP22N60DM6* | STF22N60DM6* |             |               |                |              |
| 0.195<br>0.210**               | 18               | 23         | 92          |              | STL26N60DM6* | STP26N60DM6* | STF26N60DM6* |             |               |                |              |
| 0.128<br>0.140**               | 25               | 35         | 100         | STB33N60DM6* | STL33N60DM6* | STP33N60DM6* | STF33N60DM6* |             |               |                |              |
| 0.095<br>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  |                |              |

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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