600 - 650 V
MDmesh™ DM6
Fast-recovery body
diode SJ MOSFETs
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_{rr}), and a low recovery time (T_{rr}) 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.

### MDmesh™ DM6 series

#### 600 - 650 V BV_{dss} 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.

#### KEY FEATURES
- Extremely low R_{DS(ON)*} area and Q_g and optimized capacitance profile for light load conditions
- 600 - 650 V BV_{dss} 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

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**Efficiency and system reliability**

**Efficiency test performed on 2 kW ZVS topology**

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**Table: Electrical Characteristics**

<table>
<thead>
<tr>
<th>V_{(BR)DSS} (V)</th>
<th>R_{DS(ON)} (W)</th>
<th>ID (A)</th>
<th>Q_g</th>
<th>Trr (ns)</th>
<th>Package</th>
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<tr>
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<td>0.320/0.350(****)</td>
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<td>24</td>
<td>100</td>
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<tr>
<th>V_{(BR)DSS} (V)</th>
<th>R_{DS(ON)} (W)</th>
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**Note:** *In development, **Refered to PowerFLAT™, ***Referred to TO-LL, ****Current value not referred to PowerFlat™ and TO-LL.

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**Figure: Efficiency respect Competitor**

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**Figure: Average efficiency**

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