400/650 V MDmesh™ DM2:

STPOWER MOSFET series with fast-recovery body diode

MDmesh™ DM2 is a silicon-based MOSFET technology with a fast recovery intrinsic diode. STPOWER super-junction technology has improved RDS(on) by up to 40% compared to previous versions. The MDmesh™ DM2 MOSFET family offers excellent behavior in terms of turn-off energy (Eoff), as well as a low gate charge, low input capacitance and its intrinsic diode shows very short recovery time.

**Key features**
- High breakdown voltage: from 400 up to 650 V
- Fast-recovery body diode
- Ultra-low gate charge ($Q_g$)
- Very low $R_{DS(on)}$
- Automotive AEC-Q101 qualified

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

**Key applications**
- Telecom
- Automotive
- Solar inverters
- Motor Control

Super-junction technology with fast intrinsic diode ideal for telecom, automotive, solar inverters and motor control applications.
**MDmesh™ DM2 VS competition**

The graphs show the good turn-off energy behavior especially at high currents and better efficiency vs Competition. The MDmesh™ DM2 series performs better than the direct competition and is the best-in-class among the previous ST’s fast diode technologies.

### Efficiency data @ 80% of load in evaluation board

**2 kW Fully Digital**

<table>
<thead>
<tr>
<th>VDD (V)</th>
<th>RDS(on) (Ω)</th>
<th>Part Number</th>
<th>ID (A)</th>
<th>QG (nC)</th>
<th>trr (ns)</th>
<th>Packages</th>
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<td>0.072</td>
<td>STB45N40DM2M2AG</td>
<td>38</td>
<td>56</td>
<td>95</td>
<td>DPAK/TO-220</td>
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<tr>
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<td>230</td>
<td>TO-247/PowderFLAT 8x8</td>
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<tr>
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<td>60</td>
<td>120</td>
<td>154</td>
<td>TO-247/ TO-247 Long Leads</td>
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For a complete MDmesh DM2 product portfolio visit [www.st.com/mdmeshdm2](http://www.st.com/mdmeshdm2) or consult the APP ST-MOSFET-Finder

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