MBB Half-cell Monofacial Black-frame Module (66)

**TW490~510PERC**

**M10-132-H-S**

**PRODUCT FEATURES**

- High Power Output
- Low LCOE
- Maximum Power 510W
- High Reliability
- Low LID

**POWER WARRANTY**

1st year <2%, 0.55% power degradation per year from 2 to 25 years

12-year warranty for materials

25-year warranty for linear power output

**MANAGEMENT SYSTEM AND PRODUCT CERTIFICATION**

- ISO9001: 2015/Quality Management System
- ISO14001: 2015/Environment Management System

Front  
Rear
Electrical Characteristics (STC)

Module type: TW***MAP-132-H-S

<table>
<thead>
<tr>
<th></th>
<th>490</th>
<th>495</th>
<th>500</th>
<th>505</th>
<th>510</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum power: P_{max} (W)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open circuit voltage: (V_{oc}) (V)</td>
<td>45.25</td>
<td>45.65</td>
<td>45.65</td>
<td>45.85</td>
<td>46.05</td>
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<tr>
<td>Short circuit current: (I_{sc}) (A)</td>
<td>13.8</td>
<td>13.85</td>
<td>13.9</td>
<td>13.95</td>
<td>14.0</td>
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<tr>
<td>Voltage at maximum power point: (V_{mp}) (V)</td>
<td>37.23</td>
<td>37.39</td>
<td>37.55</td>
<td>37.71</td>
<td>37.87</td>
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<tr>
<td>Current at maximum power point: (I_{mp}) (A)</td>
<td>13.16</td>
<td>13.24</td>
<td>13.32</td>
<td>13.39</td>
<td>13.47</td>
</tr>
<tr>
<td>Module efficiency: (\eta) (%)</td>
<td>20.6</td>
<td>20.8</td>
<td>21.0</td>
<td>21.3</td>
<td>21.5</td>
</tr>
</tbody>
</table>

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5, Measuring tolerance: ±3%

Electrical Characteristics (NMOT)

<table>
<thead>
<tr>
<th></th>
<th>370.8</th>
<th>374.6</th>
<th>378.4</th>
<th>382.2</th>
<th>386.0</th>
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<tbody>
<tr>
<td>Maximum power: P_{max}(W)</td>
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<tr>
<td>Open circuit voltage: (V_{oc}) (V)</td>
<td>42.92</td>
<td>43.14</td>
<td>43.35</td>
<td>43.57</td>
<td>43.80</td>
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<td>Short circuit current: (I_{sc}) (A)</td>
<td>10.89</td>
<td>10.92</td>
<td>10.95</td>
<td>10.98</td>
<td>11.02</td>
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<td>Voltage at maximum power point: (V_{mp}) (V)</td>
<td>35.55</td>
<td>35.78</td>
<td>36.00</td>
<td>36.23</td>
<td>36.45</td>
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<tr>
<td>Current at maximum power point: (I_{mp}) (A)</td>
<td>10.42</td>
<td>10.47</td>
<td>10.51</td>
<td>10.55</td>
<td>10.58</td>
</tr>
</tbody>
</table>

NMOT: Irradiance 800W/m², Ambient Temperature 20°C, Air Mass 1.5, Wind Speed 1m/s

Mechanical Parameters

- Cells: P-TPC
- Orientation: 132 (6x22)
- Size: 2093x7x1134x7x35mm
- Weight: 25.4kg
- Glass: 3.2mm AR coated heat strengthened glass
- Backsheet: White
- Frame: Anodized aluminum alloy frame
- Junction Box: P68, 3 diodes
- Cable: 4.0mm², Positive: 280mm, Negative: 280mm, length can be customized
- Connector: MOA Compatible
- Wind/Show Load: 2400Pa/5400Pa
- Packaging: 31pcs per pallet, 682pcs per 40HC

Operating Parameters

- Operational Temperature: -40°C~+85°C
- Maximum System Voltage: 1500V DC
- Maximum Series Fuse Rating: 25A
- Power Output Tolerance: 0~5W

Temperature Ratings

- Temperature Coefficient (P_{max}): -0.34%/°C
- Temperature Coefficient (V_{oc}): -0.27%/°C
- Temperature Coefficient (I_{sc}): +0.045%/°C
- NMOT: 45±2°C

Drawings (Unit: mm)

Email: sales@tongwei.com  Web: www.tongwei.com.cn  Add: 888 Changning Avenue, High-tech Zone, Hefei City, Anhui Province

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