Industrial LV100

Next gen. standard high power Module based on 7th gen. IGBT with SLC pkg. technology
SLC-Technology (Solid Cover Technology)
- Optimized structure with resin insulation
- Direct potting resin
- PC-TIM / PressFit available

7th chip technology
Improved trade-off
- IGBT (CSTBT)  
- Diode (RFC)
  \( V_{\text{CEsat}} \) vs \( E_{\text{off}} \)  
  \( V_{\text{EC}} \) vs \( E_{\text{rr}} \)
  \( dv/dt \) vs \( E_{\text{off}} \)  
  \( dv/dt \) vs \( E_{\text{rr}} \)

Low loss & Low \( dv/dt \) device

TMS-Technology (Thick Metal Substrate)
- Optimized structure with Si\(_3\)N\(_4\) ceramic insulation
- Terminal US bonding
- PC-TIM available

7th generation IGBT module
LV100 package type
NX package type
std package type
# Industrial LV100

## Line up

<table>
<thead>
<tr>
<th>Type name</th>
<th>CM800DW-34T**</th>
<th>CM800DW-34TA**</th>
<th>CM1200DW-34T**</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{CES}$</td>
<td>1700V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$I_c$</td>
<td>800A</td>
<td>800A (larger FWDi)</td>
<td>1200A</td>
</tr>
<tr>
<td>Connection</td>
<td>2in1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chip</td>
<td>7th generation IGBT / RFC diode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>SLC (SoLid Cover) technology</td>
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<td></td>
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<tr>
<td>Viso</td>
<td>4kV</td>
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**Under Development / *1200V lineup under consideration

## Features

- Compatible terminal position with the “next standard package”
- Optimized performance and cost
  
  $\Rightarrow 7$th generation chip set + SLC technology (resin insulation)
- Lower SW loss performance for higher switching frequency (1700V)
- Improved thermal cycling capability by eliminated system solder (SLC)
Packaging Technology

Classic

- Silicone gel
- Chip
- Baseplate
- Chip solder
- Ceramic insulation
- System solder

SLC-Technology

- DP(Direct Potting) Resin
- Chip
- Chip solder
- IMB
- Resin insulation
SLC package technology

- Lid
- Resin potting
- Case
- Chip and solder
- Insulated metal base plate

➤ Simplified assembly material by SLC technology
Packaging Technology

Power

- **Transfer mold power module**
  - **Over 560Mpcs already sold since 1996**

- **DIPIPM™**

- **NX T-series**
  - **7th gen IGBT**
  - **Insulated metal baseplate**
  - **DP resin insulation**

- **Industrial LV100**
  - **7th gen IGBT**
  - **Insulated metal baseplate**
  - **DP resin insulation**

- **G1-IPM**

- **NX-CIB**

Established resin package technology for power module
Low inductance package

- Very low internal inductance by laminated/symmetrical structure

Laminated terminal structure

P

N

AC
MITSUBISHI ELECTRIC

Changes for the Better