Packaging Solution for Power Device

Power Overlay (POL) - under development, sample is available -

Features

- High dimensional precision and stable shape reproducibility of power circuit by photolithography
- Excellent reliability by direct copper joints of die to substrate patterning
- Low conduction loss, low switching loss, short switching dead time and high heat dissipation
- Small form factor, lightweight, high efficiency and long lifetime for power system

Structure

- Re-distribution layer on isolation film above power device
- Multiple connecting technique capable to shrink power system

Application

- GaN Half Bridge Module with POL has been 50% downsized.

Conventional Half Bridge Module

<table>
<thead>
<tr>
<th>PCB</th>
<th>Connector</th>
<th>GaN</th>
<th>Gate driver etc.</th>
<th>TIM</th>
<th>Fins</th>
<th>Solder</th>
<th>TIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td></td>
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</tbody>
</table>

Fins & parts placed peripherally or below PCB.

Module Volume: Conventional 499.6cm³ → POL 272.7cm³

POL Half Bridge Module

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<th>PCB</th>
<th>Gate driver etc.</th>
<th>GaN</th>
<th>POL</th>
<th>DBC</th>
<th>TIM</th>
<th>Solder</th>
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Fins & parts solder connected directly above & below the dies.