Fine Pitch Cu Pillar FC

Description
Cu pillar Fc-FBGA Package use Copper(Cu) pillar bump for electrical interconnection. Cu pillar bump is a kind of interconnect between PCB and die. It composes with copper cylinder (Cu post) and mushroom shape solder cap (Solder tip).

Cu pillar bump can not only reduce the die size about 5~10% due to the advantage of fine pitch, but also enhances the thermal and electrical performance, higher reliability, improved electrical than conventional solder material. And it can accomplish to reduce the cost by design factors.

Copper pillar bumps will also help to small fillet requirement for underfill enables more aggressive die-to-package design rule / smaller package footprint.

Features
- Cu pillar with Sn/Ag plated
- 50um to 100um pitch w/ BOF bonding tech.
- Ni-Au, Ni-Pd-Au, SOP (solder on pad), OSP (organic solder preservative), Immersion Tin
- Solder ball : Pb-free solder ball available
- Dispensed underfill (DUF) & Molded underfill (MUF) available
- Supports minimum 0.4mmm ball pitch on bottom pads.
- Packing : JEDEC tray
- Package configuration : JEDEC standards

Applications
- Embedded Processors, Application Processors
- Baseband, ASICs, and Memorys

Package Sizes
- 6 x 17.1 ~ 14 x 14mm

I/O Counts
- 34 ~ 409
**Fine Pitch Cu Pillar FC**

- **Epoxy Mold Compound** (Optional)
- **FC Die**
- **Cu pillar Bump**
- **Top Solder Mask**
- **Bottom Solder Mask**
- **Underfill** (Molded Underfill available)

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**Reliability**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL Level</td>
<td>JEDEC Level 3</td>
</tr>
<tr>
<td>Temp Cycling</td>
<td>-55°C/125°C, 1000 cycles</td>
</tr>
<tr>
<td>Unbiased HAST</td>
<td>130°C/85% RH, 2 atm, 96hrs</td>
</tr>
<tr>
<td>High Temp Storage</td>
<td>150°C, 1000hrs</td>
</tr>
</tbody>
</table>

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**Thermal Data**

<table>
<thead>
<tr>
<th>BODY SIZE</th>
<th>Ball Count</th>
<th>Theta JA (°C/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCFBGA 14X14 Cu pillar</td>
<td>409</td>
<td>21.81</td>
</tr>
</tbody>
</table>

- JEDEC STD 2S2P PCB, Still air

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**Electrical Data**

- 13X13mm Body, 144B
- Simulation Frequency : 2.4GHz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance (mΩ)</td>
<td>450~3060</td>
</tr>
<tr>
<td>Inductance (nH)</td>
<td>0.63~5.4</td>
</tr>
<tr>
<td>Capacitance (pF)</td>
<td>0.73~2.76</td>
</tr>
</tbody>
</table>

- Results dependent on body size, die size, and Substrate design etc..

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