The FC300 is a high accuracy and high force flip-chip bonder for Chip-to-Chip (up to 100 mm) and Chip-to-Wafer (up to 300 mm) applications. FC300 covers a large range of bonding forces, from 1 to 4000 N. That makes it perfectly suitable for reflow and thermocompression processes.

The leveling between both components is adjusted before each bonding within 1 µradian. The parallelism adjustment, the high resolution alignment and the perfect control of all bonding parameters allow to achieve submicronic post-bond accuracy.

**Advanced R&D and Pilot line oriented,**  
**High accuracy and high force flip-chip bonder 0.5 µm**

The FC300 is a high accuracy and high force flip-chip bonder for Chip-to-Chip (up to 100 mm) and Chip-to-Wafer (up to 300 mm) applications. FC300 covers a large range of bonding forces, from 1 to 4000 N. That makes it perfectly suitable for reflow and thermocompression processes.

The leveling between both components is adjusted before each bonding within 1 µradian. The parallelism adjustment, the high resolution alignment and the perfect control of all bonding parameters allow to achieve submicronic post-bond accuracy.

**Applications**

- Infrared and X-Ray image sensors
- MicroLEDs displays
- Quantum computing
- 3D-integration, Memory stacking
- Optoelectronics and Silicon Photonics
- Flip-chip bonding, Die bonding
- Chip-to-Chip
- Chip-to-Wafer
- Nanoimprinting

**Highlights**

- **Accuracy*** ± 0.5 µm
- Low/High bonding forces
- Perfect parallelism control
- Confining gas including formic acid
- Unique vision system
- From R&D to pilot line

*depending on configuration and application.
User benefits

- Control of parallelism to guarantee very high accuracy even under high forces
- Hand free/full automated calibration
- Automatic cycle and operator independent
- High yield thanks to a stiff design
- Process recording for development, log files to track production

Main bonding process

- Flip-chip/Die bonding
- Thermocompression
- Reflow
- Gold, Gold/Tin, Indium, Copper

FC300 Specifications

<table>
<thead>
<tr>
<th>Machine</th>
<th>1850 x 1850 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>2215 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3500 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component size</th>
<th>0.2 x 0.2 – 100 x 100 mm</th>
<th>Thickness up to 6 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chip (upper die)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substrate (lower die)</td>
<td>0.5 x 0.5 – 200 x 200 mm</td>
<td>Thickness up to 6 mm Wafer up to ø 300 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bonding arm</th>
<th>Placement: ± 0.3 µm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post-bond: ± 0.5 µm</td>
</tr>
<tr>
<td>Leveling</td>
<td>Travel: ± 1 degree</td>
</tr>
<tr>
<td></td>
<td>Resolution: ± 4.2 µrad</td>
</tr>
<tr>
<td>Z resolution</td>
<td>0.06 µm</td>
</tr>
<tr>
<td>Force</td>
<td>1 up to 4000 N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alignment stage</th>
<th>XY stage: 395 x 395 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theta travel ± 5 degrees</td>
</tr>
</tbody>
</table>

Data, design and specifications depend on individual process conditions and can vary according to equipment configurations. Not all specifications may be valid simultaneously. Illustrations, photos and specifications in this datasheet are not legally binding. Specifications are subject to change without prior notice.

*depending on configuration and application.

Represented by:

SET Corporation S.A.
Smart Equipment Technology
131 impasse Barteudet
74490 Saint-Jeoire - France
• Ph: +33 (0)450 35 83 92
• Fax: +33 (0)450 35 88 01
• Email: info@set-sas.fr

www.set-sas.fr