### Volta Series Probe Specifications

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### Volta Series Probe Head

**Wafer Level Testing**

Smiths Interconnect’s Volta Series Probe Head addresses a need for reduced test time set-up and increased throughput in high reliability testing of Wafer Level Packages (WLP), Wafer Level Chip Scale Packages (WLCSP) and Known Good Die (KGD). The Volta Probe Head is capable of testing sorted die for engineering development or failure analysis. Volta Probe Heads offer high performance, fast-effective, easily maintainable alternate to cantilever and vertical probe card technologies. Smiths Interconnect’s Volta Series Probe Head offers individually replaceable and field repairable.

### Features

- Proprietary engineered plastic and machined ceramic for improved planarity allowing increased site to site testing.
- Customized footprint with component clearance close to Design Under Test (DUT).
- Probe head to PCB aligned by guide pins with optional fiducials.
- Lid design options include individual spring loaded device plunger and device guide.
- Easy maintenance and quick installation.
- Field repairable.
- Compatible to industry standard dicing systems.

### Benefits

- **Long product life:**
  - Increased test throughput
  - Enables higher signal integrity performance
- **Realized test set-up time:**
  - Lower cost of ownership

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**Volta Series Specifications**

<table>
<thead>
<tr>
<th>Volta 200</th>
<th>Volta 300</th>
<th>Volta 350</th>
<th>Volta 400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wafer I/O Pitch</td>
<td>200 μm</td>
<td>350 μm</td>
<td>350 μm</td>
</tr>
<tr>
<td>Minimum Probe Depth</td>
<td>3.85 mm</td>
<td>3.80 mm</td>
<td>3.50 mm</td>
</tr>
<tr>
<td>Probe Travel (Wafer Side)</td>
<td>230 μm</td>
<td>250 μm</td>
<td>300 μm</td>
</tr>
<tr>
<td>Probe Travel (PCB Side)</td>
<td>160 μm</td>
<td>150 μm</td>
<td>150 μm</td>
</tr>
<tr>
<td>Spring Material</td>
<td>music wire</td>
<td>stainless</td>
<td>stainless</td>
</tr>
<tr>
<td>Device Side Contact Material</td>
<td>homogeneous</td>
<td>homogeneous</td>
<td>homogeneous</td>
</tr>
<tr>
<td>Probe Tip Shape</td>
<td>4-point Crown</td>
<td>4-point Crown</td>
<td>4-point Crown</td>
</tr>
<tr>
<td>Spring Force</td>
<td>10 gf</td>
<td>17.5 gf</td>
<td>16 gf</td>
</tr>
<tr>
<td>Continuous Current Carrying Capacity (Room Temp.)</td>
<td>&lt; 250 μA</td>
<td>&lt; 150 μA</td>
<td>&lt; 70 μA</td>
</tr>
<tr>
<td>Insertion Loss (Pattern: R-S-R @ -1 dB)</td>
<td>22 GHz</td>
<td>20 GHz</td>
<td>20 GHz</td>
</tr>
<tr>
<td>Loop Inductance</td>
<td>0.56 nH</td>
<td>0.95 nH</td>
<td>1.25 nH</td>
</tr>
<tr>
<td>Capacitance</td>
<td>0.32 μF</td>
<td>0.39 μF</td>
<td>0.39 μF</td>
</tr>
<tr>
<td>Working Temperature</td>
<td>-55°C to 120°C</td>
<td>-55°C to 120°C</td>
<td>-55°C to 120°C</td>
</tr>
<tr>
<td>Max. Number of Test Sites</td>
<td>Defined by the PICA (Total pin count at a defined area is the limit)</td>
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<td>Defined by the PICA (Total pin count at a defined area is the limit)</td>
</tr>
</tbody>
</table>

### Notes

* Suitable for engineering plastic and machined ceramic.
* Suitable for engineering plastic only.