**E-tec is now the leading BGA socket manufacturer.**

EP patents 0829188, 0897655 US patents 6190181, 6249440 Patented in other countries.

Professional ClamShell sockets “Injection Molded Type” are available for chip size and grid pattern up to 35x35. They are available in SMT, thru-hole and solderless compression type versions. The SMT socket is simply placed and reflowed onto the PCB in the same way as the chip.

We aim to solve your requirements - many different terminals and configurations are available.

Your custom sets our standards!

Please note, we will always request the chip data to ensure we offer a compatible socket.

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** Specifications**

- **Mechanical data**
  - **Contact life**: 10,000 cycles min.
  - **Retention System life**: 10,000 cycles min.
  - **Solderability**: as per IEC 60982-2-58
  - **Individual contact force**: 40 grams max.

- **Material**
  - **Insulator (RoHS compliant)**: High temp plastic or epoxy FR4
  - **Terminal (RoHS compliant)**: Brass
  - **Contact (RoHS compliant)**: BeCu

- **Electrical data**
  - **Contact resistance**: <100 mΩ
  - **Current rating**: 500 mA max.
  - **Insulation resistance at 500V DC**: 100 MΩ
  - **Insulation resistance at 500V DC**: if 0.50 to 0.80mm pitch
  - **Breakdown voltage at 60 Hz**: 500V min.
  - **Capacitance**: <1 pF
  - **Inductance**: <1 nH
  - **Operating temperature**: −55°C to +125°C; 260°C for 60 sec.

**Important Note:**

Please check the ball diameters & heights of your chip prior to ordering the standard E-tec BGA (BPC) sockets. Any deviation has to be communicated to E-tec in order to check compatibility with the standard socket design and if necessary to obtain a special order.

The standard solderball diameters & heights are the following:

<table>
<thead>
<tr>
<th>Pitch</th>
<th>ball diameters &amp; heights</th>
<th>min/max</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.50mm</td>
<td>0.25mm</td>
<td>0.35mm</td>
</tr>
<tr>
<td>0.65mm</td>
<td>0.25mm</td>
<td>0.45mm</td>
</tr>
<tr>
<td>0.75mm</td>
<td>0.25mm</td>
<td>0.45mm</td>
</tr>
<tr>
<td>0.80mm</td>
<td>0.40mm</td>
<td>0.55mm</td>
</tr>
<tr>
<td>1.00mm</td>
<td>0.50mm</td>
<td>0.70mm</td>
</tr>
<tr>
<td>1.27mm &amp; higher</td>
<td>0.60mm</td>
<td>1.00mm</td>
</tr>
</tbody>
</table>

If the minimum ball diameter of a given chip falls below the above indications, then a BUC socket will generally be proposed.

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**How to order**

- **Device Type**
  - **B** = Ball Grid
  - **L** = Land Grid

- **Socket Type**
  - **P** = socket for LGA, CGA and BGA chips with standard diameter solderballs
  - **U** = socket for small diameter solderballs

- **Pitch**
  - **04** = 0.40mm
  - **05** = 0.50mm
  - **06** = 0.65mm
  - **07** = 0.75mm
  - **08** = 0.80mm

- **Grid Code**
  - will be given by the factory after receipt of the chip datasheet

- **Plating**
  - **95** = tin/gold only for Compression Type
  - **55** = gold only for Compression Type

**Nbr of contacts**

depends on ballcount of chip

**Contact Type**

| 30 | standard SMT... (A' = 1.20mm if 1.27mm pitch; 0.80mm if 1.00mm pitch; 0.60 if 0.80mm pitch; 0.40mm if <0.80mm pitch) |
| 29 | raised SMT... (A' = 5.00mm if 1.27mm pitch; 3.20mm if 1.00mm pitch; 2.80mm if 0.80mm pitch, 2.30mm if <0.80mm pitch) |
| 28 | special raised SMT - only for 1.00 & 0.80mm pitch........ (A' = 4.50mm) |
| 70 | standard solder tail........... (A' = 3.30 if 1.27mm pitch, 2.80 if 1.00mm or 0.80mm pitch, 2.30mm if <0.80mm pitch) |
| 90 & 91 | compression type (see page 8 for more details) |

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**Recommendations:**

- **Solder paste** – Please use a solder paste w/o any silver!
- **Solder profile** – Please refer to our website www.e-tec.com

E-tec solderless sockets are adapted to a standard PCB thickness of 1.60mm. For a different PCB thickness, please inform E-tec first!

SMT ClamShell sockets are recommended to be ordered with locating pegs for soldering to the PCB, to avoid the solderjoints from being stressed during the opening/closing of the retainer. If used without locating pegs, the life cycle of the socket may be heavily reduced.

For high pincount SMT sockets, E-tec recommends the use of a pluggable thru-hole socket mounted into a MiniGrid Adapter (see also page 10, 11 & 12 for more details)