

# Ball / Land Grid Array Sockets Clamshell Type



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

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

Clamshell sockets are available for any chip size and grid pattern. 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 and it only requires a small amount of additional board space. A lever is added to the Quick lock retention cover if the pincount exceeds 81 pins which allows the required pressdown forces to be applied easily.

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.**

SMT style	Soldertail style	Solderless Compression style
<p>PCB Pad Layout</p> <p>Pitch</p> <p>solder pad</p> <p>                     Ø 0,60mm/.024" if pitch 1,27mm                      Ø 0,50mm/.020" if pitch 1,00mm                      Ø 0,40mm/.016" if pitch 0,80mm                      Ø 0,35mm/.014" if pitch 0,75mm                      Ø 0,35mm/.014" if pitch 0,65mm                      Ø 0,30mm/.012" if pitch 0,50mm                 </p>	<p>Solder tail</p> <p>PCB Hole Layout</p> <p>Pitch</p> <p>solder hole</p> <p> <b>Soldertail dimension:</b>                      Ø 0,42mm/.016" if pitch 1,27mm                      Ø 0,29mm/.011" if pitch 1,00mm                      Ø 0,29mm/.011" if pitch 0,80mm                      Ø 0,27mm/.010" if pitch 0,75mm                      Ø 0,27mm/.010" if pitch 0,65mm                      Ø 0,27mm/.010" if pitch 0,50mm                 </p> <p> <b>PCB solder hole:</b>                      Ø 0,60mm/.024" if pitch 1,27mm                      Ø 0,50mm/.020" if pitch 1,00mm                      Ø 0,40mm/.016" if pitch 0,80mm                      Ø 0,35mm/.014" if pitch 0,75mm                      Ø 0,35mm/.014" if pitch 0,65mm                      Ø 0,35mm/.014" if pitch 0,50mm                 </p>	<p>Retention Cover</p> <p>BGA Chip</p> <p>BGA socket body</p> <p>PCB</p> <p>Assembly Board</p> <p>mounting screw</p> <p>PCB Pad Layout</p> <p>Pitch</p> <p>Solder Pad</p> <p>                     You may request any specific socket dimension from <a href="mailto:info@e-tec.com">info@e-tec.com</a> </p> <p>                     gold plated pads Ø 0,70mm/.027" if pitch 1,27mm                      gold plated pads Ø 0,60mm/.024" if pitch 1,00mm                      gold plated pads Ø 0,50mm/.020" if pitch 0,80mm                      gold plated pads Ø 0,45mm/.018" if pitch 0,75mm                      gold plated pads Ø 0,40mm/.016" if pitch 0,65mm                      gold plated pads Ø 0,35mm/.012" if pitch 0,50mm                 </p>

### Important Note:

Please check the ball diameters & heights of your chip prior to ordering the standard E-tec BGA (BPC, BCC) 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 code adapted to your chip dimensions. The standard solderball diameters & heights are the following:

Pitch	ball diameters min/max	ball height min/max
0.50mm	0.25mm / 0.35mm	0.15mm / 0.30mm
0.65mm	0.25mm / 0.45mm	0.15mm / 0.30mm
0.75mm	0.25mm / 0.45mm	0.15mm / 0.40mm
0.80mm	0.40mm / 0.55mm	0.25mm / 0.45mm
1.00mm	0.50mm / 0.70mm	0.30mm / 0.50mm

### 1.27mm & 1.50mm

- a) plastic chips (BPC) 0.60mm / 1.00mm 0.50mm / 0.70mm
- b) ceramic chips (BCC) 0.60mm / 1.00mm 0.80mm / 1.00mm

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

### Specifications

#### Mechanical data

Contact life	10.000 cycles min.
Retention System life	10.000 cycles min.
Solderability	exceeds MIL-STD-202 Method 208
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 if 0.50 to 0.80mm pitch 500 MΩ 1.00mm pitch upwards

#### Breakdown voltage at 60 Hz

Capacitance	< 1 pF
Inductance	< 2 nH

#### Operating temperature

-55°C to +125°C ; 260°C for 60 sec.

### Recommendations

Solder paste	Please use a solder paste w/o any silver!
Solder profile	Please refer to our website <a href="http://www.e-tec.com">www.e-tec.com</a>

### How to order

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<b>Device Type</b> <b>B</b> = Ball Grid <b>L</b> = Land Grid <b>C</b> = Column Grid	<b>Device Material</b> <b>C</b> = std. socket for ceramic device <b>P</b> = std. socket for plastic device <b>U</b> = socket adapted to small diameter solderballs	<b>Pitch</b> <b>05</b> = 0,50mm <b>10</b> = 1,00mm <b>06</b> = 0,65mm <b>12</b> = 1,27mm <b>07</b> = 0,75mm <b>15</b> = 1,50mm <b>08</b> = 0,80mm <i>others on request</i>	<b>Grid Code</b>   <b>Config Code</b> <i>will be given by the factory after receipt of the chip datasheet</i>	<b>Plating</b> <b>95</b> = tin/gold (tin leadfree) <b>55</b> = gold only for solderless Compression Type
<b>Nbr of contacts</b> <i>depends on ballcount of chip</i>	<b>Contact Type</b> <b>30</b> = 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) <b>29</b> = 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) <b>28</b> = special raised SMT - only for 1.00 & 0.80mm pitch..... („A“ = 4,50mm) <b>70</b> = 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) <b>90</b> = solderless Compression Type			