

# Ball / Land Grid Array Sockets

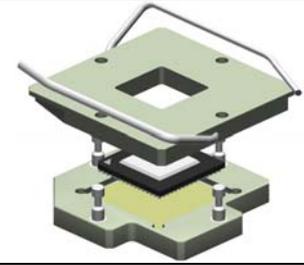
## LeverLock Type



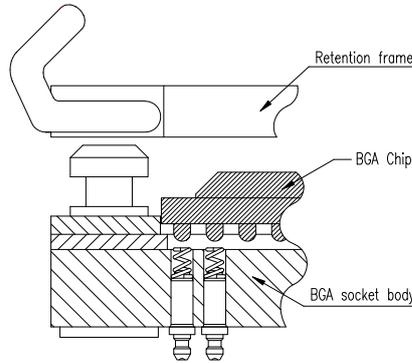
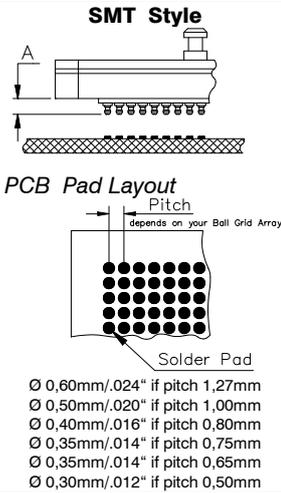
**E-tec is now the leading BGA socket manufacturer.**

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

LeverLock sockets are available for a large variety of chip sizes. The SMT socket is simply placed and reflowed onto the PCB in the same way as the chip and occupies only a small amount of additional board space. The 1.27mm pitch LeverLock socket extends ≈ 6.00mm beyond the outer ball row with no fixing holes required. 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.**



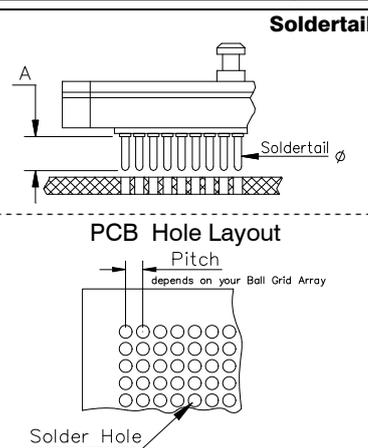
You may request any specific socket dimension from [info@e-tec.com](mailto:info@e-tec.com)

### Important Note:

Please check the ball diameters & heights of your chip prior to ordering the standard E-tec BGA (BPZ) 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	0.20mm / 0.30mm
0.65mm	0.25mm / 0.45mm	0.20mm / 0.30mm
0.75mm	0.25mm / 0.45mm	0.20mm / 0.40mm
0.80mm	0.40mm / 0.55mm	0.25mm / 0.45mm
1.00mm	0.50mm / 0.70mm	0.30mm / 0.50mm
1.27mm & higher	0.60mm / 1.00mm	0.50mm / 1.00mm

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



**Soldertail Style**

**Soldertail:**

- $\varnothing$  0,42mm/.016" if pitch 1,27mm
- $\varnothing$  0,29mm/.011" if pitch 1,00mm
- $\varnothing$  0,29mm/.011" if pitch 0,80mm
- $\varnothing$  0,27mm/.010" if pitch 0,75mm
- $\varnothing$  0,27mm/.010" if pitch 0,65mm
- $\varnothing$  0,27mm/.010" if pitch 0,50mm
- $\varnothing$  0,17mm/.007" if pitch 0,40mm

**PCB solder hole:**

- $\varnothing$  0,60mm/.024" if pitch 1,27mm
- $\varnothing$  0,50mm/.020" if pitch 1,00mm
- $\varnothing$  0,40mm/.016" if pitch 0,80mm
- $\varnothing$  0,35mm/.014" if pitch 0,75mm
- $\varnothing$  0,35mm/.014" if pitch 0,65mm
- $\varnothing$  0,35mm/.014" if pitch 0,50mm
- $\varnothing$  0,25mm/.010" if pitch 0,40mm

**Specifications**

Mechanical data	Specifications
Contact life	10.000 cycles min.
Retention system life	1.000 cycles min.
Solderability	as per IEC 60068-2-58
Individual contact force	40 grams max.
<b>Material</b>	
Insulator (RoHS compliant)	High temp plastic or epoxy FR4
Terminal (RoHS compliant)	Brass
Contact (RoHS compliant)	BeCu
<b>Electrical data</b>	
Contact resistance	< 100 m $\Omega$
Current rating	500 mA max.
Insulation resistance at 500V DC	100 M $\Omega$ if 0.50 to 0.80mm pitch 500 M $\Omega$ 1.00mm pitch upwards
Breakdown voltage at 60 Hz	500V min.
Capacitance	< 1 pF
Inductance	< 2 nH
<b>Operating temperature</b>	-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 [www.e-tec.com](http://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!

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)

For SMT sockets in general, E-tec recommends the use of locating pegs which can be soldered to the PCB for added mechanical strength.

### How to order

**X X Z** **x x x x** - **x x** **x x** - **x x** **X X** **x x** **L** ← optional for locating pegs

<p><b>Device Type</b></p> <p><b>B</b> = Ball Grid</p> <p><b>L</b> = Land Grid</p> <p><b>C</b> = Column Grid</p>	<p><b>Socket Type</b></p> <p><b>P</b> = socket for LGA, CGA and BGA chips with standard diameter solderballs (see dimensions in table above)</p> <p><b>U</b> = socket for small diameter solderballs</p>	<p><b>Pitch</b></p> <p><b>08</b> = 0,80mm</p> <p><b>10</b> = 1,00mm</p> <p><b>12</b> = 1,27mm</p> <p><b>15</b> = 1,50mm</p> <p>others on request</p>	<p><b>Grid Code</b>   <b>Config Code</b></p> <p>will be given by factory after receipt of the chip datasheet.</p> <p>Chips with dimensions over 35x35mm: LeverLock not available.</p> <p>Chips with dimensions below 21x21mm: please contact E-tec for availability first.</p>	<p><b>Plating</b></p> <p><b>95</b> = tin/gold (tin leadfree)</p> <p>-----</p> <p><b>55</b> = gold only for Compression Type</p>
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<p><b>Nbr of contacts</b></p> <p>Depends on ballcount of chip. For chips with ballcount &lt; 100 or &gt; 200 please contact E-tec for availability first</p>	<p><b>Contact Type</b></p> <p><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 &lt; 0,80mm pitch)</p> <p><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 &lt; 0,80mm pitch)</p> <p><b>28</b> = special raised SMT - only for 1.00 &amp; 0.80mm pitch..... („A“ = 4,50mm)</p> <p><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 &lt; 0,80mm pitch)</p> <p><b>90 &amp; 91</b> = compression type (see page 8 for more details)</p>
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