

# Ball / Land Grid Array Sockets

## Solderless Compression Type



**E-tec is now the leading BGA socket manufacturer and offers a solderless socket where board to chip contact is made without the need to solder.**

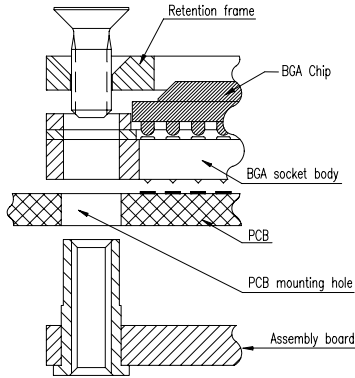
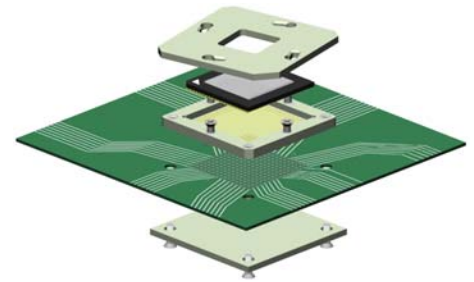
EP patents 0829188, 0897655 US patents 6190181, 6249440 Patented in other countries.

Solderless compression type sockets are available for any chip size and grid pattern.

The solderless socket is easily mounted to the PCB with 4 through hole mounting pegs. The assembly board ensures perfect coplanarity of the socket. Contact reliability is guaranteed with spring loaded gold plated contacts, which are pressed onto gold plated PCB pads. Solderless compression type sockets are generally supplied with a twist lock retention system, but knob lock, lever lock, quick lock and clam shell retention systems are also available on request. 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.**

Twist Lock Type



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

### Recommendations:

#### PCB layout gold plated pads:

- Ø 0,70mm/.027" if pitch 1,27mm
- Ø 0,60mm/.024" if pitch 1,00mm
- Ø 0,50mm/.020" if pitch 0,80mm
- Ø 0,45mm/.018" if pitch 0,75mm
- Ø 0,40mm/.016" if pitch 0,65mm
- Ø 0,35mm/.012" if pitch 0,50mm
- Ø 0,25mm/.010" if pitch 0,40mm

#### PCB thickness:

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

### Important Note:

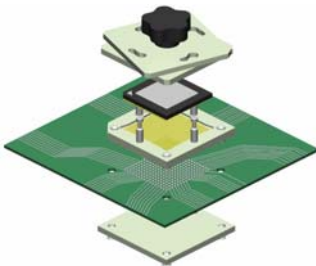
Please check the ball diameters & heights of your chip prior to ordering the standard E-tec BGA (BCP, BPP) sockets. Any deviation has to be communicated to E-tec in order to check compatibility with the standard socket design and if necessary to obtain a special order code adapted to your chip dimensions.

The standard solderball diameters & heights are the following:

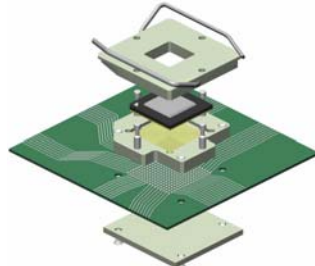
Pitch	ball diameters	ball height
	min/max	min/max
0.50mm	0.25mm / 0.35mm	0.15mm / 0.30mm
0.65mm	0.25mm / 0.45mm	0.15mm / 0.30mm
0.75mm	0.25mm / 0.45mm	0.15mm / 0.40mm
0.80mm	0.40mm / 0.55mm	0.25mm / 0.45mm
1.00mm	0.50mm / 0.70mm	0.30mm / 0.50mm
<b>1.27mm &amp; 1.50mm</b>		
a) plastic chips (BPP)	0.60mm / 1.00mm	0.50mm / 0.70mm
b) ceramic chips (BCP)	0.60mm / 1.00mm	0.80mm / 1.00mm

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

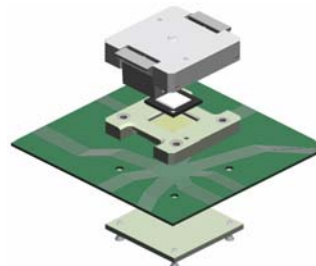
Knob Lock Type



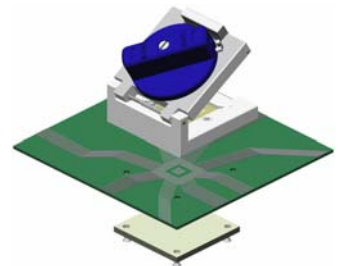
Lever Lock Type



Quick Lock Type



Clam Shell Type



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

### Specifications

#### Mechanical data

Contact life	10.000 cycles min.
Retention System life	Twist- & Lever-Lock 1.000 cycles min.
Individual contact force	Knob-, Quick-Lock & Clamshell 10.000 cycles min. 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	500V min.
Capacitance	< 1 pF
Inductance	< 2 nH

#### Operating temperature

-55°C to +125°C ; 260°C for 60 sec.

### How to order

X X P x x x x - x x 90 - x x X X 55

Device Type	
<b>B</b>	= Ball Grid
<b>L</b>	= Land Grid
<b>C</b>	= Column Grid

Device Material	
<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

Pitch	
<b>04</b>	= 0,40mm
<b>05</b>	= 0,50mm
<b>06</b>	= 0,65mm
<b>07</b>	= 0,75mm
<b>08</b>	= 0,80mm
<b>10</b>	= 1,00mm
<b>12</b>	= 1,27mm
<b>15</b>	= 1,50mm
others on request	

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

Plating
<b>55</b> = gold

Socket Type	
<b>P</b> = Twist Lock (standard)	
<b>C</b> = Clamshell	<b>K</b> = Knob Lock
<b>Q</b> = Quick Lock	<b>Z</b> = Lever Lock

Nbr of contacts
depends on ballcount of chip