

Ball / Land Grid Array Sockets

ClamShell "Economy" Type

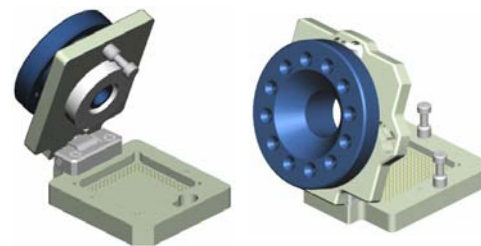


E-tec is now the leading BGA socket manufacturer.

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

Economy ClamShell sockets are available for any chip size and grid pattern. 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 solderless sockets are mounted with 2 or 4 mounting pegs to the PCB depending on the chip size. The retainer uses a thumbscrew for applying the pressdown forces which does not require any tools for opening/closing of the socket. Stopper screws for setting of the pressdown forces are incorporated in this locking system and the retainer is "open top" for improved heat dissipation.

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.

low pincount style high pincount style

SMT style	Soldertail style	Solderless Compression style
<p>PCB Pad Layout</p> <p>Pitch</p> <p>solder pad</p> <p>optional locating peg</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</p> <p>Solder Ø</p> <p>PCB Hole Layout</p> <p>Pitch</p> <p>solder hole</p> <p>Soldertail dimension: 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 Ø 0,17mm/.007" if pitch 0,40mm</p> <p>PCB solder hole: 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 Ø 0,25mm/.010" if pitch 0,40mm</p>	<p>Thumbscrew</p> <p>Retention Cover</p> <p>Retainer</p> <p>BGA Chip</p> <p>BGA socket body</p> <p>PCB</p> <p>Assembly Bord</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 info@e-tec.com</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 gold plated pads Ø 0,25mm/.010" if pitch 0,40mm</p>

Important Note:

Please check the ball diameters & heights of your chip prior to ordering the standard E-tec BGA (BPE) 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 & 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 BUE socket will generally be proposed.

Specifications

Mechanical data

Contact life 10.000 cycles min.
 Retention System life 10.000 cycles min.
 Solderability as per IEC 60068-2-58
 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 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.

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 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 15, 16 & 16a for more details)

How to order

X X E x x x x - x x x x - x x X X x x L ← optional for locating pegs

Device Type
B = Ball Grid
L = Land Grid
C = Column Grid

Socket Type
P = socket for LGA, CGA and BGA chips with standard diameter solderballs (see dimensions in table above)
U = socket for small diameter solderballs

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

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

Plating
95 = tin/gold (tin leadfree)
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 = compression Type (see page 13 for more details)