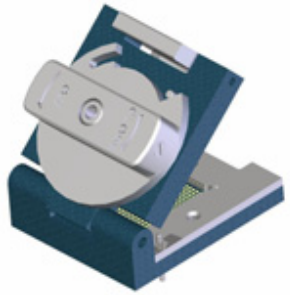
Ball / Land Grid Array Sockets
Clamshell Type

RoHS 2002/95/EC compliant

E-tec Interconnect

E-tec is now the leading BGA socket manufacturer.

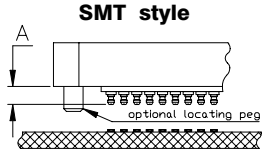
EP patents 0829188, 0897655 US patents 6190181, 6249440 Patented in other countries.



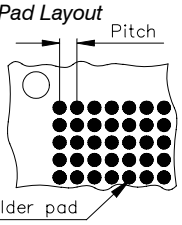
Clamshell sockets are available for any chip size and grid pattern. They are available in SMT, thru-hole and solderless compression type versions. The SMT socket is simply placed and reflowed onto the PCB in the same way as the chip and it only requires a small amount of additional board space. A lever 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

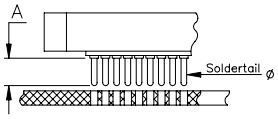


PCB Pad Layout



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

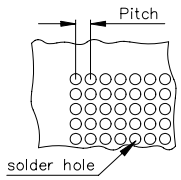
Soldertail style



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

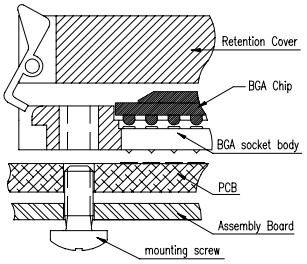
PCB Hole Layout



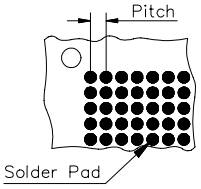
PCB solder hole:

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

Solderless Compression style



PCB Pad Layout



You may request any specific socket dimension from info@e-tec.com

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

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	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

How to order

X X C xxxx - xx xx - xx XX xx L ← optional for locating pegs

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

Device Material
- **C** = std. socket for ceramic device
- **P** = std. socket for plastic device
- **U** = socket adapted to small diameter solderballs

Pitch

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

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 solderless 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 = solderless Compression Type