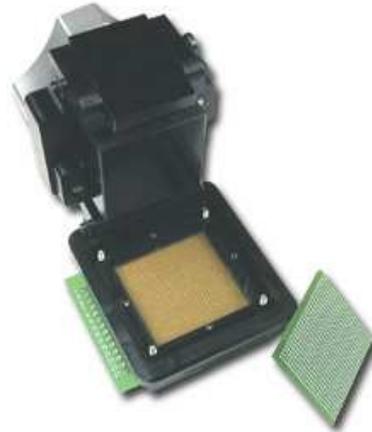


Sockets for High Temperature & High Endurance Applications

The Spring Pin Socket line allows very high endurance and wide temperature range testing of 0.3mm to 1.27mm pitch BGA, LGA, QFN, QFP and SOIC devices on the same footprint as other Ironwood socket technologies. This allows different PCB's with same footprint to accomplish many different test applications.



Standard Parts

- [BGA Spring Pin \(Pogo\) Sockets \(SS\)](#)
- [PGA Spring Pin \(Pogo\) Sockets \(SS\)](#)
- [LGA Spring Pin \(Pogo\) Sockets \(SS\)](#)
- [QFN Spring Pin \(Pogo\) Sockets \(SS\)](#)
- [QFE Spring Pin \(Pogo\) Sockets \(SS\)](#)
- [QFN Spring Pin \(Pogo\) Kelvin Sockets \(SSK\)](#)

Technical Documents

- [1mm BGA pin electrical spec](#)
- [1mm BGA pin mechanical spec](#)
- [1mm LGA pin electrical spec](#)
- [1mm LGA pin mechanical spec](#)
- [0.8mm BGA pin electrical spec](#)
- [0.8mm BGA pin mechanical spec](#)
- [0.5mm BGA pin electrical spec](#)
- [0.5mm BGA pin mechanical spec](#)
- [0.4mm BGA pin electrical spec](#)
- [0.4mm BGA pin mechanical spec](#)
- [SS BGA User Manual \(Spring Pin Socket\)](#)
- [Ironwood Socket Technologies](#)
- [S-Parameter Simulation for Sockets & Adapters](#)
- [Spring pin testing with lead and lead free solder ball](#)

Spring pin sockets provide high bandwidth in a small, cost effective design. Spring pin socket is a simple, mechanical socket based on Pogo (spring) pin technology. Spring pin socket is a solder-less socket that can be mounted on to a PCB using supplied hardware. The PCB should have mounting and alignment holes at proper locations (page 2 of the individual socket drawing shows recommended PCB layout information). The typical Spring pin socket footprint is only 5mm larger than the maximum IC size which means series resistors, capacitors, tuning inductors and others can be placed minimal distance from IC in GHz applications. The socket is mounted to the PCB with a backing plate and for all IC body sizes, spring pin sockets require a rigid metal backing plate to prevent deflection of the target circuit board due to a high normal force required to compress the spring pins. If the backside of the target PCB contains capacitors and resistors, a custom insulation plate with cavities cut for those components can be designed. This insulation plate sandwiches between the backing plate and target PCB. The socket is constructed of aluminum to dissipate up to several watts without extra heat sinking and can handle up to 100 watts with custom heat sink. The user simply places the IC into the socket, closes the lid, and rotates the heat sink screw to connect the IC. It is compatible with the alternate SG-BGA (elastomer) socket footprint and other socket technologies as well. If there are pre-existing holes in the PCB, a Spring pin socket can be custom designed to accommodate those holes (please call B.C.E. Tech Support @+39-0536-811616). Typical spring pin socket with clam shell lid is shown in the figure.



The spring pin functions as the contactor between the IC package and the circuit board. The spring pin used in the socket is a low-resistance (<0.02ohms) connector. 1mm center - double ended spring pin is shown in the picture. Double ended spring probes are primarily comprised of two plungers, barrel and spring. The spring (gold plated music wire) is sandwiched between two plungers (gold plated hardened Beryllium Copper) inside the barrel (gold plated Phosphor Bronze). The spring probe has high current rating (4.0A continuous, single probe in free air @ ambient). The operating temperature range is -40C to 150C. The self inductance of the contactor is typically 0.62nH per pin. The solder balls from the IC package come in contact with the crown end of spring pin. The bottom end of spring pin contacts the circuit board pad, completing an electrical path for the signal. The socket mechanism can be summarized as a downward force applied on the IC which compresses solder balls on the spring probe which in turn compresses on the circuit board and thereby making electrical connection.

If there is no room to put mounting holes for socket on a customer's board, the socket can be used with [SMT options](#) or with [Thru hole options](#).

B.C.E. S.r.l. - Via Regina Pacis, 54/c - I 41049 Sassuolo (MO), Italy

Tel: (+39) 0536 811616

Fax: (+39) 0536 811500

E-mail: bce@bce.it

Web: www.bce.it