0.5 mm LGA/BGA Sockets

DESCRIPTION
Tyco Electronics’ polymer interconnect technology optimizes socketing of 0.5 mm pitch LGA or BGA devices. This highly conductive polymer contact provides electrically transparent signal transfer.

APPLICATIONS
- Silicon validation
- Customer reference designs
- System test and bring up
- Wafer test

KEY FEATURES
- Solderless contact polymer contact allows for easy socket replacement
- Light compression load of 25 grams/contact limits stress on the substrate
- Flexible manufacturing process allows for asymmetrical contact patterns
- Standard array sizes available up to 40 x 40 contacts (1600 I/O)
- Compact design minimizes real estate required
- BGA sockets accommodate multiple ball sizes
- RoHs compliant

FOR MORE INFORMATION
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The innovative polymer material system provides a highly conductive interconnect. This proprietary material consists of a high temperature polymer compound that has been embedded with metallized particles. The material is formed into contacts. The contacts are held in place by a thin polyimide substrate. When mechanically compressed, the contacts' electrical characteristics are optimized.

The unique design of the BGA socket uses an anti-overstress feature which protects the contact and also provides a “well” for the ball to rest in. This “well” acts as an alignment feature which centers the BGA ball to the MPI column. Corner frames provide for gross alignment of the package to the socket.

The Matrix series sockets are available as fully arrayed sockets up to 40 x 40 contacts, 1600 I/O. Consult Tyco Electronics for custom socket and hardware solutions.
All sockets are compression mount and require a hardware system to generate the necessary forces. Tyco Electronics offers a complete hardware solution for each socket size. Below is a typical socket and hardware stack-up. The spring plate assembly provides a universal compression load and the bolster plate eliminates PCB bow.

Each hardware kit contains enough hardware for one socket - a spring plate, a top plate, and a bolster plate with insulator.
0.5mm LGA/BGA Sockets

PRODUCT DIMENSIONS

Note: All part numbers are RoHS compliant.
### 0.5mm LGA/BGA Sockets

#### PRODUCT DIMENSIONS

![Diagram of 0.5mm LGA/BGA Sockets]

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<th>PART NO.</th>
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<th>&quot;H&quot; NO. OF CONTACTS</th>
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<th>DIM J</th>
<th>DIM K</th>
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PRODUCT SPECIFICATIONS

Material:
Contact: Proprietary compound of Polymer and Silver
Insulator: Polyimide
Frame: Thermoplastic, 94V-O or Polyimide
Insulator to Frame Adhesive: Acrylic

Mechanical:
Compression Force: 25 grams per contact average
Durability: 40 cycles
PCB Thickness Range: .062” to .125”

Electrical:
Contact Resistance: 50 milliohms max
Capacitance: <0.01pF and 1 MHz
Inductance: <0.40 nH at 1.0 KHz
Power Rating: 2 amps per contact max.
Insulation Resistance: 500 meghoms at 250 VDC
Dielectric Withstanding Voltage: 250 VAC

Environmental:
Operating Temperature: 0°C to 105°C
Maximum Temperature: 105°C
Mixed Flowing Gas: EIA-364-65A
Thermal Shock: EIA-364-32
-55°C to 85°C, 10 cycles
Accelerated Temperature Cycling: EIA-540
0°C to 100°C, 1000 cycles
Humidity: EIA-364-31
25°C to 85°C, 85% RH
Shock: EIA-364-27, 5g, 1/2 sine
Vibration: EIA-364-28
7.3g rms, 50 to 2000 Hz
Temperature Life: EIA-364-17, 125°C,
1000 hours

Note: All tests performed with gold plated surfaces.
At Tyco Electronics, we’re ready to support your RoHS requirements. We’ve assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where any change was required to eliminate the restricted materials. **Compliant** – Part numbers in this catalog are RoHS Compliant, unless marked otherwise. These products comply with European Union Directive. Part numbers in this catalog are identified as:

**RoHS 2002/95/EC as amended 1 January 2006 restricts the use of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE in certain electrical and electronic products sold into the EU as of 1 July 2006.**

For purposes of this Datasheet, included within the definition of RoHS Compliant are products that are clearly “Out of Scope” of the RoHS Directive such as hand tools and other non-electrical accessories.

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**“5 of 6 Compliant”** – A “◊” symbol identifies these part numbers. These products do not fully comply with the European Union Directive 2002/95/EC because they contain lead in solderable interfaces (they do not contain any of the other five restricted substances above allowable limits). However, these products may be suitable for use in RoHS applications where there is an application-based exception for lead in solders, such as the server, storage, or networking infrastructure exemption.

Note - Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced below.

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- Cross-Reference from Non-compliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog
- Downloadable Technical Data
- Customer Information Presentation
- More detailed information regarding the definitions used above

So whatever your questions when it comes to RoHS, we’ve got the answers at [www.tycoelectronics.com/leadfree](http://www.tycoelectronics.com/leadfree).

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