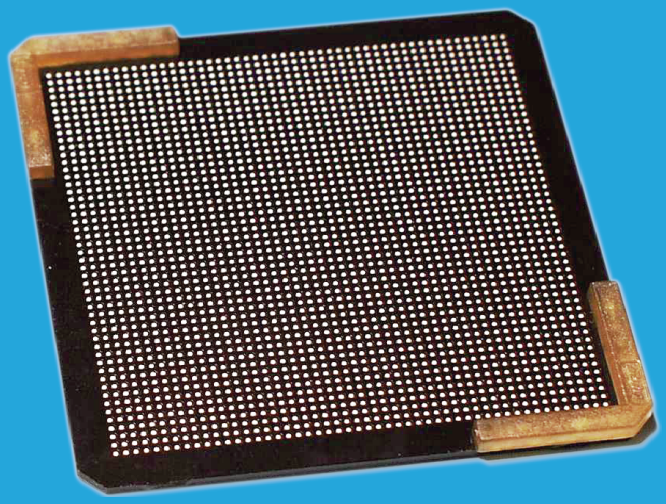

Matrix Series BGA Sockets
Featuring HXC Material System

DESCRIPTION

Tyco Electronics is pleased to announce the Matrix Series of BGA Sockets utilizing HXC 125 polymer. The sockets are fully arrayed matrixes of contacts available on 0.80mm, 1.00mm, and 1.27mm pitch. The solderless, compression mount HXC 125 contact system allows you to test a BGA device without attaching it directly to the board. The HXC 125 polymer provides electrically transparent signal transfer.

APPLICATIONS

The HXC 125 polymer system provides a highly conductive interconnect. This proprietary material consists of a high temperature polymer compound that has been embedded with metalized particles. The material is formed into micro-contacts just 0.635mm in diameter and less than 1mm high. The contacts are held in a grid pattern 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 HXC 125 polymer material. Corner frames provide for gross alignment of the package to the socket.

KEY FEATURES

- Allows socketing of BGA devices during prototyping and development
- Fully arrayed patterns available in 1.27mm, 1.00mm and 0.80mm.
- Array sizes up to 40 x 40 (1.27mm), 50 x 50 (1.00mm) and 60 x 60 (0.80mm).
- Unique corner frame design allows for gross alignment of the package to the socket
- Accommodates multiple ball sizes
- Developed for use in test, development and production environments
- Solderless, compression mount HXC 125 polymer allows for easy socket replacement
- No tooling or set up charges
- Full array stops provide anti-overstress protection and fine alignment
- Compact design minimizes real estate required
- Multiple cycles
- Sockets designed to accept JEDEC standard BGA's
- Complete hardware kits available
- Bolster plate provides support, eliminating board bow
- Spring plate provides even force distribution of compression load
- Single screw spring plate allows for easy actuation

FOR MORE INFORMATION
Technical Support
Internet: http://www.tycoelectronics.com
USA: 1-800-522-6752
Canada: 1-905-470-4425
UK: 44-1908-574289
Japan: 81-44-844-8013

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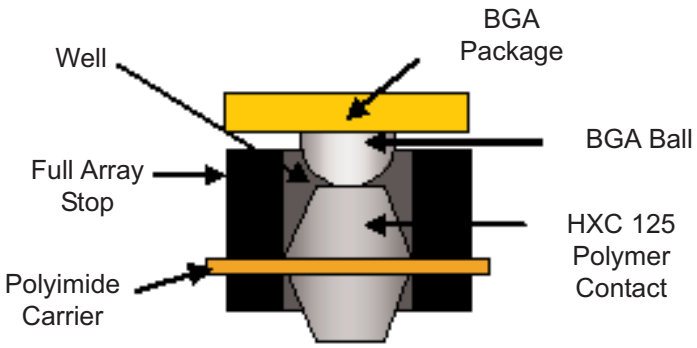
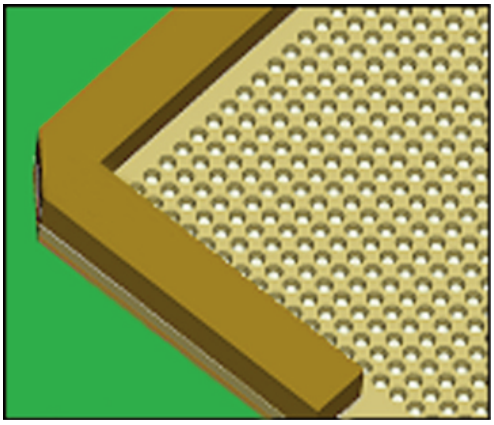
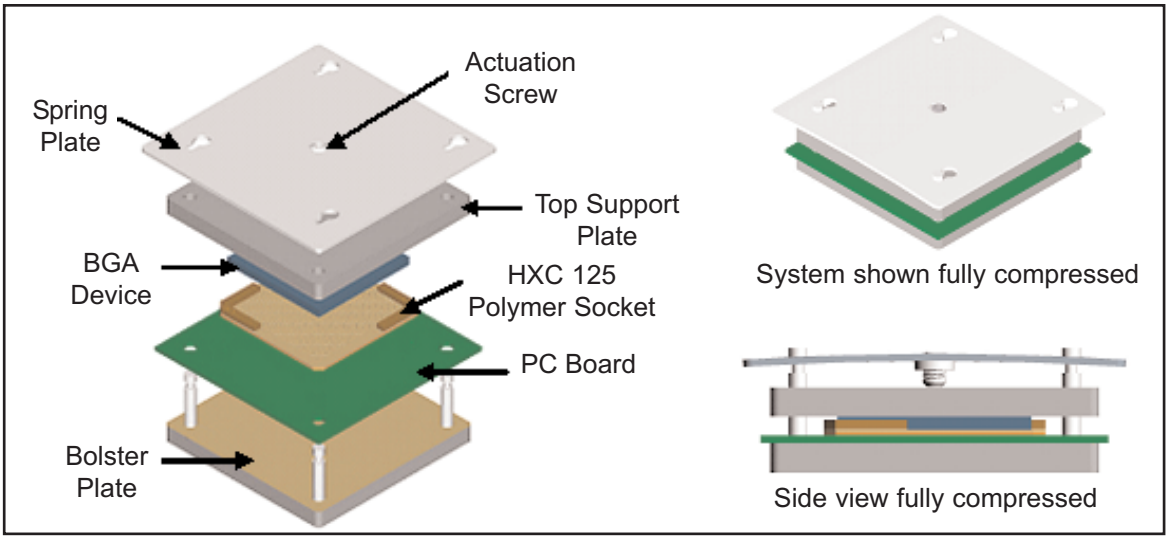


Contact to Solder Ball Interface



Close up of corner frame and HXC Polymer contacts



The HXC 125 socket provides a compression mount solderless interconnect. A hardware system is required to generate the necessary forces. Tyco Electronics offers a complete hardware solution for each socket size. Each hardware kit contains enough hardware for one socket - a spring plate, a top plate, a bolster plate with insulator.

ELECTRICAL

- Current Capability: 4 amps per column max
- Contact Resistance: 50 milliohms max
- Insulation Resistance: 1000 megohms at 100 VDC
- Inductance: Self .4nH, Mutual .2nH
- Capacitance: .1pF

MECHANICAL

- Compression Force: 45 grams/contact nominal
- Durability: 20 cycles dependent on application

ENVIRONMENTAL

- Operating Temperature: 0°C to 90°C

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MATERIALS

- Contact: HXC 125 Polymer, Metalized Polymer
- Insulator: Polyimide
- Corner Frame: Thermoplastic, 94V-0
- Stop: Thermoplastic with acrylic adhesive, 94V-0
- Solder Ball: Tin/Lead
- PCB Plating: Gold, tin/lead or silver

PRODUCT DIMENSIONS

Ball Sizes

Pitch	Style	Ball Diameter	Ball Length
1.00 mm	Type 1	0.55 to 0.72 mm	0.30 to 0.47 mm
1.00 mm	Type 2	0.55 to 0.72 mm	0.38 to 0.59 mm
1.27 mm	Type 1	0.60 to 0.90 mm	0.36 to 0.54 mm
0.80 mm	Type 1	0.40 to 0.55 mm	0.19 to 0.32 mm

Ordering information: Please contact the factory dimensional specifications, packages and ball sizes.

PART NUMBERS

1.00mm Pitch Matrix Series BGA Sockets

Package Size	Pin Count	Style	Socket Part Number	Hardware Kit Part No.
17 mm	256	Type 1	1640240-1	1640261-1
		Type 2	1640258-1	
18 mm	256	Type 1	3-1640240-6	1640261-1
		Type 2	3-1640258-6	
18 mm	289	Type 1	1640240-2	1640261-2
		Type 2	1640258-2	
19 mm	289	Type 1	3-1640240-7	1640261-2
		Type 2	3-1640258-7	
19 mm	324	Type 1	1640240-3	1640261-3
		Type 2	1640258-3	
20 mm	324	Type 1	3-1640240-8	1640261-3
		Type 2	3-1640258-8	
20 mm	361	Type 1	1640240-4	1640261-4
		Type 2	1640258-4	
21 mm	361	Type 1	3-1640240-9	1640261-4
		Type 2	3-1640258-9	
21 mm	400	Type 1	1640240-5	1640261-2
		Type 2	1640258-5	
23 mm	441	Type 1	1640240-6	1640261-5
		Type 2	1640258-6	
23 mm	484	Type 1	1640240-7	1640261-6
		Type 2	1640258-7	
25 mm	529	Type 1	1640240-8	1640261-7
		Type 2	1640258-8	
25 mm	576	Type 1	1640240-9	1640261-5
		Type 2	1640258-9	
27 mm	576	Type 1	4-1640240-0	1640261-5
		Type 2	4-1640258-0	
27 mm	625	Type 1	1-1640240-0	1640261-8
		Type 2	1-1640258-0	
27 mm	676	Type 1	1-1640240-1	1640261-9
		Type 2	1-1640258-1	
29 mm	729	Type 1	1-1640240-2	1640261-5
		Type 2	1-1640258-2	
29 mm	784	Type 1	1-1640240-3	1-1640261-0
		Type 2	1-1640258-3	
31 mm	841	Type 1	1-1640240-4	1-1640261-1
		Type 2	1-1640258-4	
31 mm	900	Type 1	1-1640240-5	1-1640261-2
		Type 2	1-1640258-5	
33 mm	961	Type 1	1-1640240-6	1-1640261-3
		Type 2	1-1640258-6	
33 mm	1024	Type 1	1-1640240-7	1-1640261-4
		Type 2	1-1640258-7	
35 mm	1089	Type 1	1-1640240-8	1-1640261-5
		Type 2	1-1640258-8	
35 mm	1156	Type 1	1-1640240-9	1-1640261-6
		Type 2	1-1640258-9	
37.5 mm	1225	Type 1	2-1640240-0	1-1640261-7
		Type 2	2-1640258-0	
37.5 mm	1296	Type 1	2-1640240-1	1-1640261-3
		Type 2	2-1640258-1	
38 mm	1369	Type 1	2-1640240-2	1-1640261-8
		Type 2	2-1640258-2	
40 mm	1444	Type 1	2-1640240-3	1-1640261-5
		Type 2	2-1640258-3	
40 mm	1521	Type 1	2-1640240-4	1-1640261-9
		Type 2	2-1640258-4	
42.5 mm	1600	Type 1	2-1640240-5	2-1640261-0
		Type 2	2-1640258-5	
43 mm	1681	Type 1	2-1640240-6	2-1640261-1
		Type 2	2-1640258-6	
43 mm	1764	Type 1	2-1640240-7	2-1640261-2
		Type 2	2-1640258-7	
45 mm	1849	Type 1	2-1640240-8	2-1640261-3
		Type 2	2-1640258-8	
45 mm	1936	Type 1	2-1640240-9	2-1640261-4
		Type 2	2-1640258-9	
47.5 mm	2025	Type 1	3-1640240-0	2-1640261-5
		Type 2	3-1640258-0	
47.5 mm	2116	Type 1	3-1640240-1	2-1640261-6
		Type 2	3-1640258-1	
47.5 mm	2209	Type 1	3-1640240-2	2-1640261-7
		Type 2	3-1640258-2	
50 mm	2304	Type 1	3-1640240-3	2-1640261-8
		Type 2	3-1640258-3	
50 mm	2401	Type 1	3-1640240-4	2-1640261-9
		Type 2	3-1640258-4	
51 mm	2500	Type 1	3-1640240-5	3-1640261-0
		Type 2	3-1640258-5	

Note: Part Numbers are RoHS Compliant.

PART NUMBERS

1.27 mm Pitch Matrix Series BGA Sockets

Package Size	Pin Count	Style	Socket Part Number	Hardware Kit Part No.
21 mm	256	Type 1	1640320-1	1640261-1
23 mm	289	Type 1	1640320-2	1640261-2
23 mm	324	Type 1	1640320-3	1640261-3
25 mm	324	Type 1	2-1640320-5	1640261-3
25 mm	361	Type 1	1640320-4	1640261-4
27 mm	400	Type 1	1640320-5	1640261-2
27 mm	441	Type 1	1640320-6	1640261-5
29 mm	441	Type 1	2-1640320-6	1-1640261-5
29 mm	484	Type 1	1640320-7	3-1640261-1
31 mm	529	Type 1	1640320-8	3-1640261-2
31 mm	576	Type 1	1640320-9	1-1640261-6
33 mm	576	Type 1	2-1640320-7	1-1640261-6
33 mm	625	Type 1	1-1640320-0	1-1640261-3
35 mm	676	Type 1	1-1640320-1	1-1640261-4
35 mm	729	Type 1	1-1640320-2	1-1640261-5
37.5 mm	784	Type 1	1-1640320-3	1-1640261-9
37.5 mm	841	Type 1	1-1640320-4	1-1640261-1
40 mm	900	Type 1	1-1640320-5	1-1640261-2
40 mm	961	Type 1	1-1640320-6	2-1640261-0
42.5 mm	1024	Type 1	1-1640320-7	3-1640261-3
42.5 mm	1089	Type 1	1-1640320-8	2-1640261-3
45 mm	1156	Type 1	1-1640320-9	2-1640261-4
45 mm	1225	Type 1	2-1640320-0	3-1640261-4
47.5 mm	1296	Type 1	2-1640320-1	2-1640261-2
47.5 mm	1369	Type 1	2-1640320-2	3-1640261-5
50 mm	1444	Type 1	2-1640320-3	3-1640261-6
50 mm	1521	Type 1	2-1640320-4	2-1640261-8
52.5 mm	1600	Type 1	2-1640320-8	3-1640261-7

0.80 mm Pitch Matrix Series BGA Sockets

Package Size	Pin Count	Style	Socket Part Number	Hardware Kit Part No.
12 mm	196	Type 1	1640294-1	1640302-1
13 mm	196	Type 1	1-1640294-1	1640302-1
13 mm	225	Type 1	1640294-2	1640302-2
14 mm	256	Type 1	1-1640294-2	1640302-1
14 mm	289	Type 1	1640294-3	1640302-3
15 mm	289	Type 1	1-1640294-3	1640302-3
15 mm	324	Type 1	1640294-4	1640302-4
16 mm	324	Type 1	1-1640294-4	1640302-4
16 mm	361	Type 1	1640294-5	1640302-5
17 mm	361	Type 1	1-1640294-5	1640302-5
17 mm	400	Type 1	1640294-6	1640302-4
18 mm	441	Type 1	1-1640294-6	1640302-8
18 mm	484	Type 1	1640294-7	1640302-6
19 mm	484	Type 1	1-1640294-7	1640302-6
19 mm	529	Type 1	1640294-8	1640302-7
20 mm	529	Type 1	1-1640294-8	1640302-7
20 mm	576	Type 1	1640294-9	1640302-8
21 mm	576	Type 1	1-1640294-9	1640302-8
21 mm	625	Type 1	1-1640294-0	1640302-6

Note: Part Numbers are RoHS Compliant.

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NOTE: For purposes of this Catalog, 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.

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 at right.

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RoHS Customer Support Center

- 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**

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