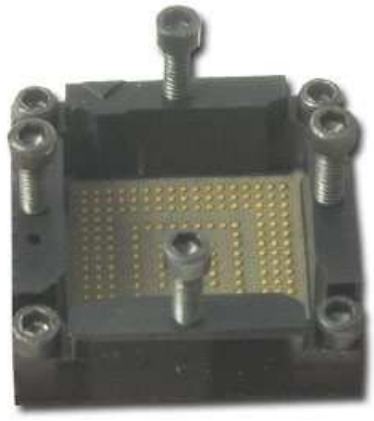
Silver Particle Interconnect Sockets

Sockets for High Bandwidth Applications

Xtreme silver particle GHz interconnect (XG) technology allows sockets to operate at very high frequency and high current applications for BGA and QFN. XG socket is particularly effective for pitch conversion and impedance matching with very low series resistance but requires tight co-planarity.

Standard Parts

- 40 GHz 0.5, 0.65mm XG-BGA
- 40 GHz 0.8, 1, 1.27mm XG-BGA
- 40 GHz XG-LGA
- 40 GHz XG-QFN



Technical Documents

- Silver Particle Elastomer Specification
- Ironwood Socket Technologies

XG socket technology is designed for wide variety of IC package sizes to operate at bandwidths up to 40 GHz with less than 1dB of insertion loss, temperature range to 100C, and high number of insertions. The tables below show the sockets that are available immediately. In addition custom sockets using these technologies can be in your hands in a matter of weeks. XG sockets are mechanically mounted over a target system's BGA lands using mounting and alignment holes at proper locations (page 2 of the individual socket drawing shows recommended PCB layout information). These low-profile sockets are only 2.5 mm per side larger than actual IC packages (industry's smallest footprint) and are compatible with the alternate socket technologies footprint as well. The sockets have a precision design, which guides the IC ball to the exact position for connection to corresponding PCB pad and uses an aluminum heat sink screw to provide compressive force. The sockets are designed to dissipate up to several watts without extra heat sinking and can handle up to 100 watts with a custom heat sink. The user simply places the IC into the socket, places the compression plate, swivels the lid, and applies torque to heat sink screw to connect the IC.

Silver particle contactor is a low resistance (<0.05ohms) connector held in flex substrate. The top side of contactor consists of gold/nickel plated individual copper pads with spiked caps that make contact with package leads/balls. The bottom side of contactor consists of silver filled individual silicone rubber pads that compresses against PCB pads. At compressed state, the distance between DUT pad and PCB pad is very similar to solder height which makes the XG interconnect transparent to electrical signal. XG interconnect delivers the clearest possible signal due to the extremely short current path, low resistance, and ultra-low inductance and capacitance. Kapton substrate holding individual interconnects provide over-compression stop preventing damage to elastomer pads.

Typical specifications for the XG interconnect include:

- 40 GHz Bandwidth
- 0.11 nH Self Inductance
- 0.015 nH Mutual Inductance
- 0.028 pF Mutual Capacitance
- Less than 50 mOhms Contact Resistance
- -40C to 100C
- 5 Amps per pin
- 25-50 grams per pin
- 10,000 Insertions

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