

ABSTRACT

HIGH DENSITY CONNECTOR SYSTEM

An electrical connector illustrated as a plug and receptacle is disclosed. In one embodiment, the connector includes a base member having a plurality of bores. A first plurality of contact elements is positioned in certain of the bores. The tail portion of each contact element extends a distance beyond the base member. A second plurality of contact elements is positioned in others of the bores. Insertion of the tail portion of the second plurality of contact elements into a circuit board is sufficient to hold the tail portions of the first plurality of contact elements against the circuit board. It is preferred for the tail portions of the second plurality of contacts to be capable of axial movement when a compression force is applied. In another embodiment, the connector includes a frame and a layer of contact elements, wherein each of the contact elements includes a forward end and a tail portion. The ends of the tail portions are positioned proximate the bottom surface of the frame. A plurality of shaped fusible elements, for example, solder balls, are located proximate the ends of the tail portions. In such an embodiment, the solder balls preferably have a deformed spherical shape, wherein the aspect ratio is greater than one.

Figure 1