CLAIMS

1. An electrical connector comprising:

a connector housing;

an array of electrical contacts supported by the connector housing, the array of electrical contacts including at least two rows of electrical contacts that are spaced from each other and extend along a first direction, and at least two columns of electrical contacts that are spaced from each other and extend along a second direction that is substantially perpendicular to the first direction, each of the at least two rows of electrical contacts intersecting each of the at least two columns of electrical contacts; and

each of the electrical contacts define a mating end and a mounting end, wherein the mating end of each of the electrical contacts comprises a receptacle defined by a pair of spring arms, the mating end of each of the electrical contacts is configured to mate with a complementary mating end of a plug electrical contact of a complementary electrical connector when the electrical connectors are mated, so as to define a stack height in a range between approximately 1 mm and approximately 3 mm.

2. The electrical connector of claim 1, further comprising solder balls fused to each of the electrical contacts at the respective mounting ends.

3. The electrical connector of claim 2, wherein the stack height is defined by opposed outermost ends of the solder balls of the electrical connector and the complementary electrical connector, respectively.

4. The electrical connector of claim 2, wherein the solder balls at the mounting ends are all coplanar with each other.

5. The electrical connector of claim 4, wherein the solder balls at least partially reside in a recessed region of the connector housing.

6. The electrical connector of claim 5, wherein the stack height is in a range between approximately 1.5 mm and approximately 2.5 mm.

7. The electrical connector of claim 1, wherein the electrical contacts only touch the connector housing at two locations and each of the two locations defines a contact area of 0.001 square millimeters to 0.015 square millimeters.

8. An electrical assembly comprising:

a first electrical connector including:

a first connector housing;

a first array of first electrical contacts supported by the first connector housing, the first array of first electrical contacts including at least two rows of first electrical contacts that are spaced from each other and extend along a first direction, and at least two columns of first electrical contacts that are spaced from each other and extend along a second direction that is substantially perpendicular to the first direction, each of the at least two rows of electrical contacts intersecting each of the at least two columns of first electrical contacts;

each of the first electrical contacts defines a mating end and a mounting end, wherein the mating end of each of the electrical contacts is a receptacle defined by a pair of spaced spring arms; and

a second electrical connector including:

a second connector housing;

a second array of second electrical contacts supported by the second connector housing, the second array of second electrical contacts including at least two rows of second electrical contacts that are spaced from each other and extend along a first direction, and at least two columns of second electrical contacts that are spaced from each other and extend along a second direction that is substantially perpendicular to the first direction, each of the at least two rows of second electrical contacts intersecting each of the at least two columns of second electrical contacts;

each of the second electrical contacts defines a mating end and a mounting end, wherein the mating end of each of the electrical contacts is a plug that is configured to be received between the spring arms of a complementary one of the second electrical contacts, such that the electrical assembly defines a stack height in a range between approximately 1 mm and approximately 3 mm.

9. The electrical assembly of claim 8, wherein the stack height is approximately 2 mm.

10. The electrical assembly of claim 9, wherein each of the electrical connectors further comprises solder balls fused to each of the electrical contacts at the respective mounting ends.

11. The electrical assembly of claim 10, wherein the solder balls are reflowed onto the electrical contacts at the respective mounting ends while the contacts are supported by the connector housing.

12. The electrical assembly of claim 11, wherein the solder balls at the mounting ends of each electrical connector are all coplanar with each other.

13. The electrical assembly of claim 12, wherein the solder balls at the mounting ends of first electrical connector are coplanar with each other in a first plane, and the solder balls at the mounting ends of the second electrical connector are coplanar with each other in a second plane, and the first plane is parallel with the second plane.

14. The electrical assembly of claim 10, wherein the solder balls at least partially reside in a recessed region of the connector housing.

CLAIMS

1. An electrical connector comprising:

a connector housing;

an array of electrical contacts supported by the connector housing, the array of electrical contacts including at least two rows of electrical contacts that are spaced from each other and extend along a first direction, and at least two columns of electrical contacts that are spaced from each other and extend along a second direction that is substantially perpendicular to the first direction, each of the at least two rows of electrical contacts intersecting each of the at least two columns of electrical contacts; and

each of the electrical contacts define a mating end and a mounting end, wherein the mating end of each of the electrical contacts comprises a receptacle defined by a pair of spring arms, the mating end of each of the electrical contacts is configured to mate with a complementary mating end of a plug electrical contact of a complementary electrical connector when the electrical connectors are mated, so as to define a stack height in a range between approximately 1 mm and approximately 3 mm;

and wherein each of the electrical contacts include retention wings that have distal tips that are separated by greater than the width of a retention cavity.

2. The electrical connector of claim 1, further comprising solder balls fused to each of the electrical contacts at the respective mounting ends.

3. The electrical connector of claim 2, wherein the stack height is defined by opposed outermost ends of the solder balls of the electrical connector and the complementary electrical connector, respectively.

4. The electrical connector of claim 2, wherein the solder balls at the mounting ends are all coplanar with each other.

5. The electrical connector of claim 4, wherein the solder balls at least partially reside in a recessed region of the connector housing.

6. The electrical connector of claim 5, wherein the stack height is in a range between approximately 1.5 mm and approximately 2.5 mm.

7. The electrical connector of claim 1, wherein the electrical contacts only touch the connector housing at two locations and each of the two locations defines a contact area of 0.001 square millimeters to 0.015 square millimeters.

8. An electrical assembly comprising:

a first electrical connector including:

a first connector housing;

a first array of first electrical contacts supported by the first connector housing, the first array of first electrical contacts including at least two rows of first electrical contacts that are spaced from each other and extend along a first direction, and at least two columns of first electrical contacts that are spaced from each other and extend along a second direction that is substantially perpendicular to the first direction, each of the at least two rows of electrical contacts intersecting each of the at least two columns of first electrical contacts;

each of the first electrical contacts defines a mating end and a mounting end, wherein the mating end of each of the electrical contacts is a receptacle defined by a pair of spaced spring arms; and

a second electrical connector including:

a second connector housing;

a second array of second electrical contacts supported by the second connector housing, the second array of second electrical contacts including at least two rows of second electrical contacts that are spaced from each other and extend along a first direction, and at least two columns of second electrical contacts that are spaced from each other and extend along a second direction that is substantially perpendicular to the first direction, each of the at least two rows of second electrical contacts intersecting each of the at least two columns of second electrical contacts;

each of the second electrical contacts defines a mating end and a mounting end, wherein the mating end of each of the electrical contacts is a plug that is configured to be received between the spring arms of a complementary one of the second electrical contacts, such that the electrical assembly defines a stack height in a range between approximately 1 mm and approximately 3 mm and wherein each of the electrical contacts include retention wings that have distal tips that are separated by greater than the width of a retention cavity.

9. The electrical assembly of claim 8, wherein the stack height is approximately 2 mm.

10. The electrical assembly of claim 9, wherein each of the electrical connectors further comprises solder balls fused to each of the electrical contacts at the respective mounting ends.

11. The electrical assembly of claim 10, wherein the solder balls are reflowed onto the electrical contacts at the respective mounting ends while the contacts are supported by the connector housing.

12. The electrical assembly of claim 11, wherein the solder balls at the mounting ends of each electrical connector are all coplanar with each other.

13. The electrical assembly of claim 12, wherein the solder balls at the mounting ends of first electrical connector are coplanar with each other in a first plane, and the solder balls at the mounting ends of the second electrical connector are coplanar with each other in a second plane, and the first plane is parallel with the second plane.

14. The electrical assembly of claim 10, wherein the solder balls at least partially reside in a recessed region of the connector housing.