CLAIMS

1. An electrical interconnect mechanism, comprising: at least one electrically conductive elastomeric pin fixedly placed onto at least one retainer tab having at least one bendable electrically conductive protrusion extending laterally therefrom, the at least one bendable electrically conductive protrusion having one portion being connected to at least one side of the pin; and a housing having a catch or recess for engagement with another portion of the protrusion of the tab terminating in an end so as to guide and locate the at least one elastomeric pin and removably secure the end of the protrusion in place within the catch or recess of the housing and provide a physical retention of the protrusion within the recess of the housing and an electrical conduit.

2. A mechanism according to Claim 1, in which an electrical connection is formed upon compression of the pin by the electrical conduit.

3. A mechanism according to Claim 1, in which the housing includes a chamfered surface(s) for guiding the pin into the housing and having another catch and the retainer tab has another protrusion laterally extending from a side of the tab opposite the protrusion engaging the catch of the housing so that the other protrusion engages the catch of the chamfered surface(s) and provide the physical retention and the electrical conduit.

4. A mechanism according to Claim 1, in which the tab is made of metal.

5. A mechanism according to Claim 1, in which the tab is formed as a solid metal ring configured as a slide collar and located around a centre of the elastomeric pin.

6. A mechanism according to Claim 5, in which the elastomeric pin is located on one side of the metal slide collar.

7. A mechanism according to Claim 5, in which the elastomeric pin is located on one side of the metal slide collar guide with a contact pin on the elastomeric pin.

8. A mechanism according to Claim 5, in which the elastomeric pin is located on one side of the metal slide collar guide with the metal collar guide having a contact pin on the opposite side.

9. A mechanism according to Claim 1, in which the at least one protrusion is formed as a continuous ring around a perimeter of the pin.

10. A mechanism according to Claim 1, in which the protrusion is formed as a continuous ring around a perimeter of the pin.

11. A mechanism according to Claim 1, in which the housing has a predetermined height that controls an amount of compression of the elastomeric pin so that the housing acts as a compression stop.

12. An electrical interconnect mechanism, comprising: at least one electrically conductive elastomeric pin having at least one bendable electrically conductive protrusion extending laterally therefrom, the at least one bendable electrically conductive protrusion having one portion that is connected to at least one side of the pin; and a housing having a mechanism for engagement with another portion of the protrusion of the tab terminating in an end so as to guide and locate each of the at least elastomeric pin and removably secure the end of the protrusion within the housing, to guide and locate the at least one elastomeric pin and removably secure the end of the protrusion in place within the catch or recess of the housing and provide a physical retention of the protrusion with the recess of the housing and an electrical conduit.

13. A mechanism according to Claim 12, in which an electrical connection is formed when the pin is compressed.

14. A method for an electrical interconnect mechanism, the steps comprising: Placing at least one electrically conductive elastomeric pin fixedly placed onto at least one retainer tab having at least one bendable electrically conductive protrusion extending laterally therefrom, the at least one bendable electrically conductive protrusion having one portion being connected to at least one side of the pin; and engaging a housing having a catch or recess for engaging with another portion of the protrusion of the tab terminating in an end so as to locate and guide each of the elastomeric pin and removably secure the end within the housing guide and locate the at least one elastomeric pin and removably secure the end of the protrusion in place within the catch or recess of the housing and provide a physical retention of the protrusion within the recess of the housing and an electrical conduit.

15. A method according to Claim 14, the steps further comprising providing at least one chamfered surface(s) as part of the housing, the chamfered surface(s) having another recess and the retainer tab has another protrusion laterally extending from a side of the tab opposite;

the protrusion that engages with the catch of the housing; engaging the other protrusion with the catch of the chamfered surface(s) when the elastomeric pin is compressed.

16. A method according to Claim 14 further comprising the step of forming the protrusions as a continuous ring around a perimeter of the pin.

17. An electrical interconnector mechanism, comprising: At least one electrically conductive elastomeric pin fixedly placed onto at least one electrically conductive bendable electrically conductive disc having one portion that is connected to at least one side of the pin to provide an electrically conductive, compliant connection with an electrical circuit or component, the disc having another portion that is removably secured within a recess or catch of a housing of the electrical circuit or component to provide a physical retention of the protrusion with the recess of the housing and an electrical conduit.

18. A mechanism according to Claim 17, in which the disc is not limited to any geometric shape or configuration.

19. A mechanism according to Claim 17, in which the disc is soldered to a pad on the electrical circuit or component.

20. A method for an electrical interconnect mechanism, the steps comprising: fixedly placing at least one electrically conductive elastomeric pin onto at least one electrically conductive disc by soldering the disc to a pad on the an electrical circuit and thus provide an electrically conductive, complaint connection with an electrical circuit or component.

21. An electrical interconnect mechanism, comprising:

at least one electrically conductive elastomeric pin fixedly placed onto at least one retainer tab having at least one bendable electrically conductive protrusion extending laterally therefrom, the at least one bendable electrically conductive protrusion being connected to at least one side of the pin; and

a housing having a catch or recess for engagement with the protrusion of the tab so as to guide and locate the at least one elastomeric pin and removably secure the protrusion in place within the catch or recess of the housing and provide a physical retention of the protrusion with the recess of the housing and an electrical conduit,

the tab being formed as a solid metal ring configured as a slide collar and located around a centre of the elastomeric pin, the elastomeric container being located on one side of the metal slide collar guide without a contactor on the elastomeric contactor.

22. An electrical interconnect mechanism, comprising:

at least one electrically conductive elastomeric pin fixedly placed onto at least one retainer tab having at least one bendable electrically conductive protrusion extending laterally therefrom, the at least one bendable electrically conductive protrusion being connected to at least one side of the pin; and

a housing having a catch or recess for engagement with the protrusion of the tab so as to guide and locate the at least one elastomeric pin and removably secure ~~it~~ the protrusion in place within the catch or recess of the housing and provide a physical retention of the protrusion with the recess of the housing and an electrical conduit and a retaining mechanism for the elastomeric pin that is formed as part of the elastomeric pin.

23. A mechanism according to Claim 22, in which the retaining mechanism is formed as protrusions extending laterally from each side of the pin to provide a retaining mechanism for engaging the retaining tab of the housing.

24. A mechanism according to Claim 22, in which the housing is provided with one or more chamfered surfaces in its interior, in which the pin is inserted to guide the pin within the housing the chamfer having catches or protrusions for engaging the laterally extending protrusions of catches of the pin.

25. A mechanism according to Claim 22, in which the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

26. A mechanism according to Claim 22, in which the elastomer pin is formed to provide a retaining mechanism in a shape of a nail head shape for the elastomer pin and engaging laterally protruding tabs or catches for the optionally chamfered surface of the housing so as to engage the nail head shaped protrusion of the pin.

27. A mechanism according to Claim 22, in which the retaining mechanism for the elastomer pin is formed as part of the elastomer pin.

28. A mechanism according to Claim 22, in which the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

29. A method for an electrical interconnect mechanism, the steps comprising:

providing at least one electrically conductive elastomeric pin having at least one electrically conductive protrusion extending laterally therefrom; and

engaging a housing having a mechanism for engagement with the protrusion of the pin so as to locate each of the elastomeric pin and removably secure it within the housing.

30. A method according to Claim 29 further comprising the step of forming the retaining mechanism for the elastomer pin as part of the elastomer pin.

31. A method according to Claim 29 further comprising the step of forming the retaining mechanism of the pin, a protrusion extending laterally to provide a retaining mechanism for engaging catches in the housing.

32. A method according to Claim 29, in which the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

33. A method according to Claim 29, in which the elastomer pin is formed to provide a retaining mechanism in a shape of a nail head shape for the elastomer pin and engaging laterally protruding tabs for the chamfered surface(s) of the housing rather than catches for the chamfered stop of the housing so as to engage the nail head shaped protrusion of the pin.

34. A method according to Claim 29, in which the retaining mechanism for the elastomer pin is formed as part of the elastomer pin.

35. A method according to Claim 29, in which the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

36. A method according to Claim 29 further comprising the step of forming the protrusions formed as a continuous ring around a perimeter of the pin.

37. A method according to Claim 29, in which the housing has a height that can be varied to provide control over an amount of compression of the elastomer pin by the house acting as a compression stop.

38. A method according to Claim 29, in which the elastomer pin is formed as two separate pins each having a retaining mechanism in a shape of a nail head shape for the elastomer pin for engaging laterally protruding tabs for the tabs of the housing.

39. An apparatus according to Claim 21, in which the elastomer pin is formed as one of two separate pins, the other pin being made of metal, each pin having a retaining mechanism in a shape of a nail head shape for the elastomer pin and the metal pin for engaging laterally positioned catches or protruding tabs for the tabs of the housing.

CLAIMS

1. An electrical interconnect mechanism, comprising:

at least one electrically conductive elastomeric pin fixedly placed onto at least one retainer tab having at least one bendable electrically conductive protrusion extending laterally therefrom, said at least one bendable electrically conductive protrusion being connected to at least one side of said pin so as to replace said at least one elastomeric pin; and

a housing having a catch or recess for removable engagement with said protrusion of said tab so as to guide and locate said at least one elastomeric pin and removably secure it said protrusion in place within said catch or recess of the housing and provide a physical retention of said protrusion with said recess of said housing and an electrical conduit.

2. The mechanism according to claim 1 wherein an electrical connection is formed upon compression of said pin by said electrical conduit.

3. The mechanism according to claim 1 wherein said housing includes a chamfered surface(s) for guiding said pin into said catch or said recess of said housing and having another catch and said retainer tab has another protrusion laterally extending from a side of said tab opposite, said protrusion removably engaging said catch of said housing so that said other protrusion removably engages said catch of said chamfered surface(s) and provide a physical retention and an electrical conduit.

4. The mechanism according to claim 1 wherein said tab is made of metal.

5. The mechanism according to claim 1 wherein said tab is formed as a solid metal ring configured as a slide collar and located around a center of said elastomeric pin.

6. The mechanism according to claim 5 wherein the elastomeric contactor is located on one side of the metal slide collar.

7. The mechanism according to claim 5 wherein the elastomeric contactor is located on one side of the metal slide collar guide with a contact pin on the elastomeric contactor to prevent said contactor from expanding into said catch when said elastomeric contactor is compressed.

8. The mechanism according to claim 5 wherein the elastomeric contactor is located on one side of the metal slide collar guide without a contact pin on the elastomeric contactor.

9. The mechanism according to claim 5 wherein the elastomeric contactor is located on one side of the metal slide collar guide with the metal collar guide having a contact pin on the opposite side.

10. The mechanism according to claim 1 wherein said at least one protrusion is formed as a continuous ring around a perimeter of said pin to provide for multiple conducive connections.

11. An electrical interconnect mechanism, comprising:

at least one electrically conductive elastomeric pin having at least one protrusion extending laterally therefrom, said at least one bendable electrically conductive protrusion being connected to at least one side of said at least one pin; and

a housing having a mechanism for engagement with said protrusion of said tab so as to locate each of the elastomeric pin and removably secure said protrusion within the housing, to guide and locate said at least one elastomeric pin and removably secure said protrusion in place within said catch or recess of the housing and provide a physical retention of said protrusion with said recess of said housing and an electrical conduit so as to replace said at least one elastomeric pin.

12. The mechanism according to claim 11 wherein an electrical connection is formed when said pin is compressed.

13. The mechanism according to claim 11 wherein a retaining mechanism for the elastomer pin is formed as part of the elastomer pin.

14. The mechanism according to claim 11 wherein said retaining mechanism is formed as protrusions extending laterally from each side of said pin to provide a retaining mechanism for removably engaging the retaining tab of the housing so as to replace said at least one elastomeric pin.

15. The mechanism according to claim 13 wherein said housing is provided with one or more chamfered surfaces in its interior wherein said pin is inserted to guide said pin within said housing said chamfer having catches or protrusions for removably engaging said laterally extending protrusions of catches of said pin.

16. The mechanism according to claim 11 wherein the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

17. The mechanism according to claim 11 wherein the elastomer pin is formed to provide a retaining mechanism in a shape of a nail head shape for the elastomer pin and removably engaging laterally protruding tabs or catches for the optionally chamfered surface of the housing so as to removably engage the nail head shaped protrusion of the pin to replace it.

18. The mechanism according to claim 13 wherein the retaining mechanism for the elastomer pin is formed as part of the elastomer pin.

19. The mechanism according to claim 12 wherein the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

20. The mechanism according to claim 1 wherein said protrusions are formed as a continuous ring around a perimeter of said pin.

21. A method for an electrical interconnect mechanism, the steps comprising:

Placing at least one electrically conductive elastomeric pin fixedly placed onto at least one retainer tab having at least one bendable protrusion extending laterally therefrom, said protrusion being connected to at least one side of said pin; and

engaging a housing having a catch or recess for engaging with said protrusion of said tab so as to locate each of the elastomeric pin and removably secure, it within the housing guide and locate said at least one elastomeric pin and removably secure said protrusion in place within said catch or recess of the housing and provide a physical retention of said protrusion with said recess of said housing and an electrical conduit so as to replace said at least one elastomeric pin.

22. The method according to claim 21 the steps further comprising providing at least one chamfered surface(s) as part of said housing, said chamfered surface(s) having another recess and said retainer tab has another protrusion laterally extending from a side of said tab opposite; said protrusion that engages with said catch of said housing; engaging said other protrusion with said catch of said chamfered surface(s) when said elastomeric contactor is compressed.

23. The method according to claim 21 further comprising the step of forming said protrusions as a continuous ring around a perimeter of said pin.

24. A method for an electrical interconnect mechanism, the steps comprising:

Providing at least one electrically conductive elastomeric pin having at least one protrusion extending laterally therefrom; and

Engaging a housing having a mechanism for engagement with said protrusion of said pin so as to locate each of the elastomeric pin and removably secure it within the housing so as to replace said at least one elastomeric pin.

25. The method according to claim 24 further comprising the step of forming the retaining mechanism for the elastomer pin as part of the elastomer pin.

26. The method according to claim 24 further comprising the step of forming said retaining mechanism of said pin, a protrusion extending laterally to provide a retaining mechanism for engaging catches in the housing so as to replace said at least one elastomeric pin.

27. The method according to claim24 wherein the retaining mechanism can be formed as one piece unit made solely of elastomer material.

28. The method according to claim 24 wherein the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

29. The method according to claim 24 wherein the elastomer pin is formed to provide a retaining mechanism in a shape of a nail head shape for the elastomer pin and engaging laterally protruding tabs for the chamfered surface(s) of the housing rather than catches for the chamfered stop of the housing so as to removably engage the nail head shaped protrusion of the pin so as to replace said pin.

30. The method according to claim 24 wherein the retaining mechanism for the elastomer pin is formed as part of the elastomer pin.

31. The method according to claim 24 wherein the retaining mechanism can be formed as a one piece unit made solely of elastomer material.

32. The method according to claim 24 further comprising the step of forming said protrusions formed as a continuous ring around a perimeter of said pin.

33. The method according to claim 24 wherein said housing has a height that can be varied to provide control over an amount of compression of said pin by said house acting as a compression stop.

34. The mechanism according to claim 1 wherein said housing has a predetermined height that controls an amount of compression of said elastomeric pin so that said housing acts as a compression stop.

35. The method according to claim 18 wherein the elastomer pin is formed as two separate pins each has a retaining mechanism in a shape of a nail head shape for the elastomer pin for removably engaging laterally protruding tabs for the tabs of the housing. so as to replace said pins.

36. The apparatus according to claim 1 wherein the elastomer pin is formed as one of two separate pins, the other pin being made of metal, each pin having a retaining mechanism in a shape of a nail head shape for the elastomer pin and the metal pin for engaging laterally positioned catches or protruding tabs for the tabs of the housing.

37. The mechanism according to claim 1 wherein a temporary or permanent adhesive or epoxy or any other bonding agents is applied to one or more of a top and/or a bottom of each compression stop and/or housing and/or BGA stop therefore alleviating a need for a mechanical fastening mechanism or other such fastening mechanisms.

38. An electrical interconnector mechanism, comprising:

At least one electrically conductive elastomeric pin fixedly placed onto at least one electrically conductive disc to provide a removable electrically conductive, compliant connection with an electrical circuit or component for replacing said at least one disc.

39. The mechanism according to claim 38 wherein said disc is not limited to any geometric shape or configuration.

40. A method for an electrical interconnect mechanism, the steps comprising:

Fixedly placing at least one electrically conductive elastomeric pin onto at least one electrically conductive disc by soldering the disc to a pad on said an electrical circuit and thus provide an electrically conductive, complaint removable connection with an electrical circuit or component so as to remove said disc.