

CLAIMS

1. A testing head (20) for testing the functionality of an electronic device, said testing head (20) comprising:

5 - a plurality of contact probes (10, 10bis) comprising a probe body (10') extended longitudinally between respective end portions (10a, 10b) which are adapted to contact respective contact pads;

- at least one lower guide (40) provided with guide holes (40h) for the sliding housing of the contact probes (10, 10bis); and

10 - a conductive portion (21) in said lower guide (40), said conductive portion (21) including at least one group (40h') of said guide holes (40h) and being adapted to contact and short-circuit a corresponding group of contact probes which are housed in said group (40h') of holes and are adapted to carry a certain type of signal,

15 characterized in that at least the contact probes (10) housed in said group (40h') of holes comprise an elastically deformable portion (P) adapted to be inserted at least partially into the guide holes of said group (40h'), wherein said portion (P), when housed in the guide holes of said group (40h'), is in a configuration in which it is deformed by the contact with at least one wall (40hW) of said guide holes and exerts on said wall (40hW)
20 a reaction force (F), ensuring a sliding contact during the test of the electronic device.

2. The testing head (20) according to claim 1, wherein said at least one conductive portion (21) covers at least one portion of at least one wall (40hW) of the guide holes of said group (40h') of holes, forming a
25 metallized portion of said holes which said elastically deformable portion (P) is adapted to contact.

3. The testing head (20) according to claim 2, wherein the entire wall (40hW) of said holes is covered by the conductive portion (21).

4. The testing head (20) according to any one of the preceding claims, further comprising an upper guide (50) separated from the lower guide (40) by an air gap (G) and provided with respective guide holes (50h), wherein the conductive portion (21) and the elastically deformable portion (P) are arranged only at the lower guide (40), which is the guide closest to the device under test, or are arranged at both said guides (40, 50).
5. The testing head (20) according to claim 4, wherein the lower guide (40) and the upper guide (50) are shifted from each other, resulting in an offset of the first end portion (10a) of each contact probe (10, 10bis) with respect to the second end portion (10b).
6. The testing head (20) according to any one of the preceding claims, also comprising contact probes (10bis) without said elastically deformable portion (P).
7. The testing head (20) according to any one of the preceding claims, wherein said at least one conductive portion (21) is configured to form a common conductive plane for one of a ground domain, a power domain, or for a set of contact probes (10) carrying a same operating signal.
8. The testing head (20) according to any one of the preceding claims, wherein the probe body (10') of the contact probes (10) comprises, at the elastically deformable portion (P), a through cut (C) which separates different portions of said probe body (10') from each other and defines the shape of said portion (P).
9. The testing head (20) according to claim 8, wherein said cut (C) extends at least along two different directions and defines said elastically deformable portion (P) in the form of a strip, which is connected to the probe body (10') at a connection zone (Z) and is separated from the rest of the probe body (10') by said cut (C), said strip being adapted to contact the wall (40hW) of the guide holes when it is housed therein and being configured to be elastically deformed and to exert on said wall (40hW)

said reaction force (F).

10. The testing head (20) according to claim 9, wherein said elastically deformable strip comprises a curved section (C') with respect to the longitudinal axis thereof.

5 11. The testing head (20) according to any one of claims 8 to 10, wherein, in the deformed configuration when the contact probes (10) are housed in the holes of the lower guide (40), the deformation of the elastically deformable portion (P) results in a reduction of the area of said cut (C) with respect to the configuration in which said contact probes (10) are
10 not housed in the holes of said lower guide (40).

12. The testing head (20) according to any one of the preceding claims, wherein said elastically deformable portion (P) extends longitudinally along a length at least equal to the thickness of the lower guide (40).

13. The testing head (20) according to any one of the preceding claims,
15 wherein, in the configuration in which the contact probes (10) are not housed in the guide holes, the probe body (10') at a section of said elastically deformable portion (P) has a maximum transversal extension (T) greater than the width of the guide holes (40h) of the lower guide (40).

14. The testing head (20) according to any one of the preceding claims,
20 wherein the end portion (10a) of the contact probes (10) comprises a beveled portion (11), said end portion (10a) being adapted to contact pads of the device under test.

15. The testing head (20) according to any one of the preceding claims, wherein the conductive portion (21) is arranged on one face (F1, F2) of
25 the lower guide (40).

16. The testing head (20) according to any one of the preceding claims, wherein the conductive portion (21) is in the form of a plurality of metallizations, which are electrically insulated from each other and are configured to form a plurality of conductive portions for the contact

probes (10).