CLAIMS

1. A contact probe (20) comprising a probe body (20C) extended between a first end portion (20A) and a second end portion (20B) and provided with at least one pair of arms (22a, 22b) separated by a slot (21) made in said probe body (20C) according to a longitudinal development direction of said contact probe (20), characterized in that it comprises at least one conductive insert (25) extended inside said contact probe (20) along said longitudinal development direction arranged in a bending plane (α) of said contact probe (20), said conductive insert (25) being made of a first material having a lower electrical resistivity than an electrical resistivity of a second material which said contact probe (20) is made of, said conductive insert (25) being a power transmission element and said arms (22a, 22b) being structural support elements of said contact probe (20) during a deformation of said probe body (20C).

2. The contact probe (20) according to claim 1, characterized in that said first material has an electrical resistivity lower than 30 μΩ*cm.

3. The contact probe (20) according to claim 1, characterized in that said first material is a low-electrical resistivity conductive or semiconductor material selected from gold (Au), copper (Cu), silver (Ag), aluminum (Al), platinum (Pt) and alloys thereof and said second material is a structurally stable conductive material selected from nickel, tungsten, cobalt, palladium or alloys thereof, such as the nickel-manganese, nickel-cobalt, nickel-palladium or nickel-tungsten, palladium-cobalt alloys, palladium-based ternary and quaternary alloys.

4. The contact probe (20) according to claim 1, characterized in that said first material is silver and said second material is palladium-cobalt

5. The contact probe (20) according to claim 1, characterized in that said conductive insert (25) has a transversal dimension (D) being orthogonal to said longitudinal development direction and being lower than corresponding transversal dimensions (D2a, D2b) of said arms (22a,

22b).

6. The contact probe (20) according to claim 5, characterized in that said conductive insert (25) has a transversal dimension (D) being lower than 20 μm.

7. The contact probe (20) according to claim 5, characterized in that said transversal dimension (D) of said conductive insert (25) is equal to 20%-60% of a minimum value of said transversal dimensions (D2a, D2b) of said arms (22a, 22b).

8. The contact probe (20) according to claim 1, characterized in that said conductive insert (25) is arranged at a minimum stress position along a neutral axis of said contact probe (20) in said bending plane (α).

9. The contact probe (20) according to claim 1, characterized in that said conductive insert (25) is placed within said slot (21).

10. The contact probe (20) according to claim 9, characterized in that said conductive insert (25) comprises a plurality of parallel foils placed within said slot (21).

11. The contact probe (20) according to claim 1, characterized in that said conductive insert (25, 25a, 25b) is made inside one of said arms (22a, 22b).

12. The contact probe (20) according to claim 1, characterized in that it comprises at least one arm made of said first low-electrical resistivity material so as to form said conductive insert (25).

13. The contact probe (20) according to claim 1, characterized in that said conductive insert (25) has a length (L1) equal to a length of said slot (21).

14. The contact probe (20) according to claim 1, characterized in that said probe body (20C) comprises an alternation of arms (22a, 22b) and conductive inserts (25, 25a, 25b, 25c).

15. The contact probe (20) according to claim 1, characterized in that said conductive insert (25) comprises a central conductive insert (25c) being placed within said slot (21) and additional conductive portions (26a-26d) being made by means of said first material and being completely embedded within said second material which said contact probe (20) is made of.

16. The contact probe (20) according to claim 15, characterized in that said additional conductive portions (26a-26d) are realized in said first second end portion (20A) and second end portion (20B) of said contact probe (20).

17. The contact probe (20) according to claim 1, characterized in that said conductive insert (25) extends along said entire contact probe (20) and emerges with respect to said second material at a first contact area (23A) and a second contact area (23B) made at said first end portion (20A) and second end portion (20A) of said contact probe (20), respectively.

18. The contact probe (20) according to claim 1, characterized in that said conductive insert (25) comprises at least one conductive insert (25a, 25b) longitudinally extended in each of said arms (22a, 22b).

19. The contact probe (20) according to claim 18, characterized in that said conductive inserts (25a, 25b) extended in each of said arms (22a, 22b) are made so as to be completely incorporated in said second material which forms said arms (22a, 22b)

20. The contact probe (20) according to claim 18, characterized in that said conductive inserts (25a, 25b) extended in each of said arms (22a, 22b) are made so as to emerge at side walls (SLa, SLb) of said slot (21).

21. The contact probe (20) according to claim 18, characterized in that said conductive insert (25) further comprises a central conductive insert (25c) placed at said slot (21).

22. The contact probe (20) according to claim 1, characterized in that

said conductive insert (25; 25a, 25b, 25c) has a length along said longitudinal development direction that is lower than a length (LS) of said contact probe (20).

23. The contact probe (20) according to claim 1, characterized in that said conductive insert (25; 25a, 25b, 25c) has a length along said longitudinal development direction such as to emerge from said second material that forms said contact probe (20).

24. A probe head (30) for testing an integrated device under test (40) including a plurality of contact probes (20) provided with at least one end portion (20A) adapted to abut onto a contact pad (40A) of said integrated device under test (40), characterized in that it comprises contact probes (20) made according to any one of the previous claims and having probe bodies (20C) provided with arms (22a, 22b) and with at least one conductive insert (25).

25. The probe head (20) according to claim 24, characterized in that it comprises a first plurality of contact probes (20) having probe bodies (20C) provided with arms (22a, 22b) and with at least one conductive insert (25) and a second plurality of contact probes (20) having probe bodies (20C) provided with arms (22a, 22b) and missing at least one conductive insert (25).

26. The probe head (20) according to claim 24, characterized in that it only comprises contact probes (20) having probe bodies (20C) provided with arms (22a, 22b) and with at least one conductive insert (25).