CLAIMS

1. A contact probe (10) for a testing head of a testing apparatus of electronic devices comprising a body essentially extended in a longitudinal direction (Y) between respective end portions adapted to contact respective contact pads and having a height (H) in a direction (Z) orthogonal to said longitudinal direction (Y), at least one end portion (10A), which is adapted to contact a contact pad of a testing device through a contact area (22), comprising an insert (20) made of a first conductive material having a hardness being greater than a second conductive material, which said contact probe (10) is made of, said contact probe (10), said insert (20) being supported by a section (21) of said end portion (10A), said section (21) being made of said second conductive material and being shaped so as to have a shape that is complementary to said insert (20) and to have respective abutting surfaces (21A, 21B) facing and adhering to respective abutting surfaces (20A, 20B) of said insert (20), said insert (20) and said section (21) having respective free end surfaces (22A, 22B) forming said contact area (22) of said contact probe (10), characterized in that said insert (20) is positioned at one corner of said contact probe (10) and has at least two exposed surfaces other than the free end surface (22A) forming said contact area (22).

2. The contact probe according to claim 1, characterized in that said first conductive material is a metal or metal alloy chosen from rhodium, platinum, iridium or a metal alloy thereof or a palladium-cobalt alloy, a palladium-nickel alloy or a nickel-phosphorus alloy, preferably rhodium.

3. The contact probe according to claim 1, characterized in that said second conductive material is a metal or metal alloy chosen from nickel or a metal alloy thereof, such as nickel-manganese, nickel-cobalt or nickel-tungsten alloys, copper or an alloy thereof, palladium or an alloy thereof, preferably nickel-tungsten.

4. The contact probe according to claim 1, characterized in that said insert (20) comprises at least one first abutting surface (20A) arranged at the bottom of said insert (20) along said longitudinal direction (Y) of said contact probe (10), at an opposite position with respect to said contact area (22), and at least one second lateral abutting surface (20B) along a

transversal direction (X) perpendicular to said longitudinal direction (Y), said first and second abutting surfaces (20A, 20B) of said insert (20) being facing and contacting respectively first and second abutting surfaces (21A, 21B) of said section (21).

5. The contact probe according to any preceding claim, characterized in that said section (21) comprises a thin plate portion (21', 21") for abutting said insert (20, 20', 20").

6. The contact probe according to any preceding claim, characterized in that said insert (20) has a height (H1) corresponding to said height (H) of said contact probe (10) and particularly of said section (21).

7. The contact probe according to any claim 1 to 5, characterized in that said insert (20) has a height (H2, H4) less than said height (H) of said contact probe (10) and particularly of said section (21).

8. The contact probe according to claim 7, characterized in that said insert (20) has a height (H2, H4) equal to 20%-80% of said height (H) of said contact probe (10) and particularly of said section (21), preferably equal to 50%.

9. The contact probe according to any preceding claim, characterized in that said insert (20) and said section (21) have a lowered portion (25) that decreases a height (H3) of said contact area (22) to 20%-80% of said height (H) of said contact probe (10).

10. The contact probe according to any preceding claim, characterized by further comprising at least one coating layer (23), extending at said end portion (10A), in order to cover at least said section (21) and said insert (20).

11. The contact probe according to claim 10, characterized in that said coating layer (23) is made of a conductive alloy having a low internal stress, preferably a nickel alloy or a conductive alloy having a substantial wear resistance, preferably rhodium or an alloy thereof.

12. The contact probe according to any preceding claim, characterized by further comprising at least one adhesion film (24) arranged on said abutting surfaces between said insert (20) and said section (21).

13. The contact probe according to claim 12, characterized in that said adhesion film (24) is a metal or a metal alloy chosen from nickel or a nickel alloy or gold, silver, platinum or a metal alloy thereof, preferably gold.

14. The contact probe according to any preceding claim, characterized in that said free end surfaces (22A, 22B) are curvilinear.

15. The contact probe according to claim 14, characterized in that said contact area (22) is formed by said free end surface (22A) of said insert (20) only.

16. The contact probe according to any preceding claim, characterized in that said end portion (10A) comprises at least one first insert (20') and one second insert (20"), arranged symmetrically on the sides of a thin plate portion (21') of said section (21) realizing a support for both said inserts (20', 20").

17. The contact probe according to claim 16, characterized in that said thin plate portion (21") has a height (H4) less than said height (H) of said contact probe (10).

18. The contact probe according to claim 17, characterized in that said thin plate portion (21") is arranged centrally and it is fully surrounded by said insert (20), which is crown-shaped, or it is arranged having a surface emerging from one surface of said contact probe (10), said insert (20) being U-shaped, or it is arranged at one corner of said contact probe (10), surrounded by said insert (20), which is L-shaped.

19. The contact probe according to any preceding claim, characterized by comprising at least one material bridge (30) that is arranged between said insert (20) and said section (21).

20. The contact probe according to claim 19, characterized in that said material bridge (30) is made of said first conductive material.

21. The contact probe according to any preceding claim, characterized in that said insert (20) has a length (L) along said longitudinal direction (Y) between 10μm and 1000μm.

22. A testing head for a testing apparatus of electronic devices

characterized by comprising a plurality of contact probes (10), said contact probes (10) being realized according to any preceding claim.