

CLAIMS

1. Biometric sensor module for a chip card, comprising
 - a dielectric carrier (101) comprising a front face and a back face, both
 - 5 forming main faces of the carrier (101),
 - a biometric sensor (300) for detecting fingerprints attached to the back face and extending beneath the back face over a detection area located facing a detection region located on the front face of the carrier (101),
 - electrically conductive connection pads (7), arranged on the back face
 - 10 of the carrier (101) and electrically connected to the biometric sensor (300),
 - characterized in that at least one connection pad (7) comprises a region that is wettable with a solder material, extending over an area of between 0.2 and 5 square millimetres,
 - at least one connection pad (7) is placed essentially opposite a region
 - 15 of the front face covered with a bezel (5) and at least one conductive via (104) is made in the thickness of the carrier (101), the via (104) electrically connecting the bezel (5) to the connection pad (7).
2. Module according to Claim 1, in which at least one connection pad (7)
- 20 has a region that is wettable with a solder material delimited by an essentially continuous perimeter taking a shape chosen from among a rectangle, a rhombus, a square, an oval, or a circle.
3. Module according to Claim 2, in which at least one connection pad (7)
- 25 comprises extensions (10) extending from the region that is wettable with a solder material towards a free end.
4. Module according to one of the preceding claims, in which a blob of solder material (6) is deposited on the wettable region of at least one
- 30 connection pad (7), this blob having a volume of between 0.002 and 0.070 cubic millimetres.

5. Module according to Claim 4, in which the solder material is an alloy having a melting temperature lower than or equal to 140°C and included in the list consisting of tin/bismuth and tin/bismuth/silver and tin/indium.
- 5 6. Module according to one of Claims 4 and 5, in which the blob of solder material (6) has a height measured perpendicular to the carrier (101), between the surface of the connection pad (7) on which it is deposited and its highest point, of between 0.040 and 0.150 millimetres.
- 10 7. Module according to any one of the preceding claims, in which the dielectric carrier (101) is a flexible carrier from the polyimide family.
8. Chip card comprising a card body with an electrical circuit (200) integrated into the card body and a module (4) according to one of the
15 preceding claims, the module (4) and the circuit (200) being electrically connected using a solder material (6).
9. Chip card according to Claim 8, in which the module (4) and the circuit (200) are electrically connected using a solder material (6) deposited on at
20 least one connection pad (7) the melting temperature of which is lower than or equal to 140°C.
10. Chip card according to Claim 8 or 9, in which the module (4) and the circuit (200) are electrically connected using a solder material (6) deposited on
25 at least one connection pad (7) and a solder material (206) deposited on the circuit (200), the melting temperature of the solder material (6) deposited on at least one connection pad (7) being lower than or equal to that of the solder material (206) deposited on the circuit (200).
- 30 11. Method for producing a biometric sensor module (4) for a chip card, comprising steps of
- providing a dielectric carrier (101) comprising a front face and a back

face, both forming main faces of the carrier (101),

- attaching a biometric sensor (300) for detecting fingerprints to the back face, a detection area covered by the sensor on the back face being placed opposite a detection area located on the front face of the carrier (101),

5 - producing electrically conductive connection pads (7) on the back face of the carrier (101) which are electrically connected to the biometric sensor (300),

characterized in that at least one connection pad (7) comprises a region that is wettable with a solder material, extending over an area of between 0.2
10 and 5 square millimetres,

at least one connection pad (7) is placed essentially opposite a region of the front face covered with a bezel (5) and at least one conductive via (104) is made in the thickness of the carrier (101), this via (104) electrically connecting the bezel (5) to the connection pad (7).

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12. Method according to Claim 11, in which a blob of solder (6) is deposited on a connection pad (7).

13. Method according to Claim 12, in which the solder material (6) is
20 deposited by jetting on a connection pad (7).

14. Method according to Claim 12 or 13, in which the solder material (6) is deposited on a connection pad (7) after the biometric sensor (300) has been attached to the back face of the carrier (101).

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15. Method according to one of Claims 11 to 14, in which the biometric sensor (300) is attached to the back face of the carrier (101) using an adhesive for attaching chips which crosslinks at temperatures of between 100°C and 150°C.