CLAIMS

1. A three-dimensional magnetic field detection device comprising magnetic field detecting elements configured to detect a magnetic field in a direction parallel to a face of a substrate and soft magnetic bodies configured to collect and radiate a magnetic field orthogonal to the face of the substrate, wherein:

an axis (X) extending in a first axial direction on the face of the substrate, an axis (Y) extending in a second axial direction orthogonal to the first axial direction, and an axis (Z) extending in a third axial direction orthogonal to the face of the substrate cross one another at an origin as a center of measurement of the magnetic field on the face of the substrate;

the magnetic field detecting elements are so arranged on the substrate that two of the magnetic field detecting elements are positioned in the first axial direction point-symmetrically with respect to the origin set as a center of symmetry and one of the magnetic field detecting elements is positioned in the second axial direction point-symmetrically with respect to the origin as the center of symmetry, and

the soft magnetic bodies are positioned above the origin and below ends of the two of the magnetic field detecting elements positioned in the first axial direction, which ends are each opposite to the origin; and

a magnetic circuit including the two of the magnetic field detecting elements and three of the soft magnetic bodies is formed in the first axial direction.

2. The three-dimensional magnetic field detection device according to claim 1, wherein two soft magnetic bodies positioned below the ends of two magnetic field detecting elements are each located on a surface of a machined end face machined in a direction perpendicular to the face of the substrate.

3. The three-dimensional magnetic field detection device according to claim 2,

wherein the three-dimensional magnetic field detection device has a length of 0.6 mm or less, a width of 0.3 mm or less, and a thickness of 0.15 mm or less.

4. The three-dimensional magnetic field detection device according to claim 1, wherein the three-dimensional magnetic field detection device has a length of 0.6 mm or less, a width of 0.3 mm or less, and a thickness of 0.15 mm or less.

5. A three-dimensional magnetic field detector, comprising the three-dimensional magnetic field detection device according to claim 1 and an integrated circuit chip which is bonded to the three-dimensional magnetic field detection device.

6. A three-dimensional magnetic field detector according to claim 5, wherein the three-dimensional magnetic field detection device and the integrated circuit chip are electrically bonded together by stacking the three-dimensional magnetic field detection device and the integrated circuit chip to bond them to each other with a pad.