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(54) Name of the Device: Rotary transformer

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Specifications

Name of the Device:

Rotary transformer

Scope of the Utility Model Registration Request:

A rotary transformer which is characterized in that, in a rotary transformer in which the principal plane of a pair of disk-shaped ferrite cores is provided with annular coil placement grooves and the disk-shaped ferrite cores with coils arranged in the principal plane of the disk-shaped ferrite cores are arranged so that their principal planes are opposite each other, at least one of the aforementioned disc-shaped ferrite cores has a board mounting groove extending radially in the principal plane of the disc-shaped ferrite core, the board is placed in the board mounting groove, and the terminals of these coils are connected to the board.

Detailed Description of the Invention:

(Field of Industrial Application)

This invention relates to a rotary transformer used in video tape recorders and the like.



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(Prior Art)

A top view of a conventional example of a rotary transformer is shown in Fig. 3 and a rear view is shown in Fig. 4. In this conventional example, four coil grooves 32 are formed on the principal plane of the disk-shaped ferrite core 31 and coils (not shown) are placed in the grooves 32. The leads 34 of the coil are led out to the back side through slit grooves 33 extending in radial directions, and the leads are connected to a flexible board 35 bonded to the back side. Then, a protrusion 36 extending from the flexible board 35 is used to connect the flexible board to an external circuit.

(Problem to be Solved by the Utility Model)

As the equipment in which rotary transformers are incorporated becomes smaller, there is a strong demand for smaller and thinner rotary transformers.

When a conventional structure of a thin type is considered, it is necessary to reduce the thickness of the disc-shaped ferrite core, the thickness of the flexible board, and the height of

the soldering process for the leads. The principle way to try to make a thinner profile is to reduce the thickness of the disc-shaped ferrite cores. However, due the problem of strength, there were limits to how thin the disc-shaped ferrite cores can be made.

A design with a stepped surface on the part of the back side of the disc-shaped ferrite core to which the flexible board is bonded has also been proposed, but the thickness of the stepped surface is extremely thin and there was a strength problem with it.

In view of the above facts, the purpose of this utility model is to provide a rotary transformer with a new structure that can achieve the thinning.

(Means of Solving the Problem)

This utility model describes a rotary transformer in which a pair of disk-shaped ferrite cores having annular coil placement grooves are formed on a principal plane of the disk-shaped ferrite cores which are arranged so that their principal planes are opposite each other and

concentric coils are installed in the coil placement grooves. At least one of said pair of disc-shaped ferrite cores has a board mounting structure which extends in a radial direction of the principal planes of said disc-shaped ferrite cores, a board is placed on said board mounting structure, and the terminals of said coils are connected to said board. The board is placed on the board mounting structure and the terminals of the coils are connected to the board.

(Implementation Example)

A top view of an example is shown in Fig. 1, and an enlarged cross-sectional view is shown in Fig. 2. In this example, four coil placement grooves are formed on the principal plane of the disc-shaped ferrite core 1, and coils are placed in these grooves. The coils are made of a conductive wire material wound in a spiral shape. In the principal plane of the disc-shaped ferrite core 1, a board mounting groove 5 is formed extending in the radial direction, and a flexible board 4 is attached to this board mounting groove 5. Then, the leads 3 of the coils are soldered to the connecting leads on the flexible board 4 in the board mounting groove 5 of the core 1.

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