short fibers.

PRIOR ART DOCUMENTS

PATENT DOCUMENTS

[0005]

Patent document 1: Japanese Unexamined Patent Publication (Kokai) No. 2014-148111

Patent document 2: Japanese Unexamined Patent Publication (Kokai) No. HEI 9-46082

SUMMARY

PROBLEMS TO BE SOLVED

[0006]

For the invention described in Patent document 1, however, resin sheets and fiber reinforced plastic sheets have to be stacked in a complicated manner, and further improvement is required to increase the mass productivity. The housing for electronic instruments disclosed in Patent document 2, furthermore, is a housing for electric/electronic instruments composed mainly of a first layer of molded FRP and a second layer of resin containing reinforcing short fibers, and the two layers are integrated using an adhesive, but further improvement is required to realize weight reduction and mass productivity enhancement.

[0007]

Thus, an object of the embodiments disclosed herein is to provide an electronic device housing that is able to maintain the antenna performance without deteriorating the radio communication performance, excellent in the degree of warpage and dimensional accuracy, high in heat resistance and/or dimensional accuracy during moisture absorption, and also high in mass productivity.

[0007a]

In an aspect, there is provided an electronic device housing comprising a fiber reinforcing member (a) and a fiber reinforcing member (b),

the fiber reinforcing member (a) containing a resin (a1) and a fiber (a2), the fiber (a2) being in the form of discontinuous fibers,

the fiber reinforcing member (b) containing a resin (b1) and a fiber (b2), the fiber (b2) being in the form of continuous fibers,

the projected area of the fiber reinforcing member (a) accounting for 60% or more of the total projected area, which accounts for 100%, of the housing projected onto the plane of the top face, and

the resin (a1) meeting requirements (i) and/or (ii) given below:

(i) the resin (a1) is a thermoplastic resin having a melting point of more than 265°C, and

(ii) the resin (a1) is a thermoplastic resin having a water absorption rate of 0.4% or less.

[0007b]
In another aspect, there is provided a production method for an electronic device housing as defined above comprising:
a first step for inserting the fiber reinforcing member (b) into die with a temperature controlled at 100°C or more and a second step for injecting a resin composition containing a thermoplastic resin (a1) and a fiber (a2) into the inserted fiber reinforcing member (b) existing in the die to form a fiber reinforcing member (a) so that the fiber reinforcing member (a) and the fiber reinforcing member (b) are integrated.

MEANS OF SOLVING THE PROBLEMS
[0008]
The present disclosure, which aims for solving the above problems, is as described below.
(1) An electronic device housing including a fiber reinforcing member (a) and a fiber reinforcing member (b),
the fiber reinforcing member (a) containing a resin (a1) and a fiber (a2), the fiber (a2) being constituted of discontinuous fibers,
the fiber reinforcing member (b) containing a resin (b1) and a fiber (b2),
the fiber (b2) being constituted of continuous fibers,
the projected area of the fiber reinforcing member (a) accounting for 60% or more of the total projected area, which accounts for 100%, of the housing projected onto the plane of the top face, and
meeting at least either requirement (i) or (ii) given below:

[0009]
(i) the resin (a1) is a thermoplastic resin having a melting point of more than 265°C, and
[0010]
(ii) the resin (a1) is a thermoplastic resin having a water absorption rate of 0.4% or less.

ADVANTAGEOUS EFFECTS

[0011]
The present disclosure can provide an electronic device housing that is able to maintain the antenna performance without deteriorating the radio communication performance, excellent in the degree of warpage and dimensional accuracy, high in heat resistance and/or dimensional accuracy during moisture absorption, and also high in mass productivity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]
[Fig. 1] gives schematic diagrams of a typical fiber reinforcing member (b), wherein diagram (i) shows a cross section and diagram (ii) shows a surface observed from the direction of the arrow.
[Fig. 2] gives schematic diagrams of another typical fiber reinforcing member (b), wherein diagram (i) shows a cross section and diagram (ii) shows a surface observed from the direction of the arrow.
[Fig. 3] gives schematic diagrams of still another typical fiber reinforcing member (b), wherein diagram (i) shows a cross section and diagram (ii) shows a surface observed from the direction of the arrow.

DESCRIPTION OF PREFERRED EMBODIMENTS

[0013]
A preferred embodiment of the present invention is described below.
[0014]
The electronic device housing according to the present invention is one composed mainly of a fiber reinforcing member (a) and a fiber reinforcing member (b).
[0015]
Any fiber reinforcing member (a) used for the present invention contains a resin (a1) and a fiber (a2), and the resin (a1) meets the requirements (i) and/or (ii) given below.
[0016]
First, requirement (i) is described in detail. For the present invention, any resin (a1) that meets the requirement (i) is a thermoplastic resin having a melting point of more than 265°C. Examples of the thermoplastic resin having a melting point of more than 265°C include polyesters such as polyethylene naphthalate (PEN) and liquid crystal polyesters; polyamides