[0004]
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
[0005]
For the invention described in Patent document 1, however, resin sheets that provide a radio wave transmitting part and serve as an antenna and fiber reinforced plastic sheets that provide an electromagnetic wave shielding part have to be stacked in a complicated manner, and further improvement is required to increase the mass productivity. The electronic device housing 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. Furthermore, these disclosed techniques are intended to construct a housing by combining a plurality of members having different characteristics, and therefore, differences in characteristics among these members lead to moldings suffering from strain and modification, resulting in failure in developing sufficiently good characteristics.
[0006]
Thus, an object of the embodiments disclosed herein is to provide an electronic device housing that can maintain the antenna performance without deteriorating the radio communication performance, ensures uniform characteristics as one molded electronic device housing in spite of consisting of a plurality of members to develop radio wave shielding capability as well, and show excellent features in terms of the degree of warpage and dimensional accuracy as well as small deformation in high temperature environments and high mass productivity.

MEANS OF SOLVING THE PROBLEMS
[0007]
The present disclosure, which aims at 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 reinforcing member (b) containing a resin (b1) and a fiber (b2),
the fiber reinforcing member (a) and the fiber reinforcing member (b) being joined directly without the existence of another layer at the joining face between the fiber reinforcing member (a) and the fiber reinforcing member (b), and

the fiber reinforcing members (a) and (b) meeting equations (1) and/or (2):

[0008]

$0.5 < A1 / B1 < 3$ equation (1)

A1: linear expansion coefficient of the fiber reinforcing member (a)

B1: linear expansion coefficient of the fiber reinforcing member (b)

$0.7 < A2 / B2 < 1.2$ equation (2)

A2: bending elastic modulus of the fiber reinforcing member (a)

B2: bending elastic modulus of the fiber reinforcing member (b)

[0008a]

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 reinforcing member (b) containing a resin (b1) and a fiber (b2),

the fiber reinforcing member (a) and the fiber reinforcing member (b) being joined directly without the existence of another layer at the joining face between the fiber reinforcing member (a) and the fiber reinforcing member (b), and

the fiber reinforcing members (a) and (b) meeting equations (1) and/or (2):

$0.5 < A1 / B1 < 3$ equation (1)

A1: linear expansion coefficient of the fiber reinforcing member (a)

B1: linear expansion coefficient of the fiber reinforcing member (b)

$0.7 < A2 / B2 < 1.2$ equation (2)

A2: bending elastic modulus of the fiber reinforcing member (a)

B2: bending elastic modulus of the fiber reinforcing member (b).

[0008b]

In another 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 reinforcing member (b) containing a resin (b1) and a fiber (b2),

the fiber reinforcing member (b) having a region containing a thermoplastic resin at least near the interface with the fiber reinforcing member (a),

the fiber reinforcing member (a) and the fiber reinforcing member (b) being joined directly, and

the fiber reinforcing members (a) and (b) meeting equations (1) and/or (2):

$0.5 < A1 / B1 < 3$ equation (1)

A1: linear expansion coefficient of the fiber reinforcing member (a)

B1: linear expansion coefficient of the fiber reinforcing member (b)

$0.7 < A2 / B2 < 1.2$ equation (2)

A2: bending elastic modulus of the fiber reinforcing member (a)

B2: bending elastic modulus of the fiber reinforcing member (b).

ADVANTAGEOUS EFFECTS

[0009]

The present disclosure can provide an electronic device housing that can maintain the antenna performance without deteriorating the radio communication performance, ensures uniform characteristics as one molded electronic device housing in spite of consisting of a plurality of members, and show excellent features in terms of the degree of warpage and dimensional accuracy as well as small deformation in high temperature environments and high mass productivity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

[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

[0011]

A preferred embodiment of the present invention is described below.

[0012]

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).

[0013]

It is necessary for the electronic device housing according to the present invention to meet