CLAIMS

1 A method for manufacturing an electronic device comprising:
a film bonding step of bonding an adhesive layer of an electronic-device-protecting film to one surface of a ring frame which is a frame having an opening, the adhesive layer being bonded so as to cover the opening;
a semiconductor-part bonding step of bonding a plurality of semiconductor parts to the surface of the adhesive layer that is exposed via the opening with the semiconductor parts set apart from each other;
a sealant-covering step of covering the semiconductor parts and the surface of the adhesive layer with a sealant; and
a heat-curing step of fixing by suction of a side of a base layer of the electronic-device-protecting film to a heated chuck table, and heat-curing the sealant to obtain an electronic device in which the semiconductor parts are sealed in an array configuration, wherein
the electronic-device-protecting film includes a base layer and the adhesive layer, and
in the base layer, the ratio R_E (= E'(160)/E'(50)) of the tensile elastic modulus E'(160) at 160°C to the tensile elastic modulus E'(50) at 50°C is such that $0.05 < R_E < 1$.

2 The method for manufacturing an electronic device according to claim 1, wherein the adhesive constituting the adhesive layer has the storage elastic modulus G'(150) at 150°C of 1×10^4 to 500×10^4 Pa.

3 The method for manufacturing an electronic device according to claim 1, wherein the adhesive layer has an adhesive force to a silicon wafer of 0.1 to 10 N/25 mm which is measured according to JIS Z 0237.

4 The method for manufacturing an electronic device according to claim 1, wherein the base layer includes one or two or more resins selected from the group consisting of polyimide, polyethylene naphthalate and polyethylene terephthalate.

5 The method for manufacturing an electronic device according to claim 1 further comprising an interconnection-layer forming step of forming an interconnection layer on the electronic device in which the semiconductor parts are sealed in an array configuration.

6 The method for manufacturing an electronic device according to claim 5 further comprising a segmenting step of separating, into segments, the electronic device in which the semiconductor parts are sealed in an array configuration on which the interconnection layer is formed.

7 A method for manufacturing a package comprising a mounting step of mounting the electronic device according to claim 6 on a substrate.

8 An electronic-device-protecting member which is used in a method for manufacturing an electronic device, and includes a ring frame which is a frame having an opening and an electronic-device-protecting film bonded to one surface of the frame so as to cover the opening, wherein
the electronic-device-protecting film includes a base layer and an adhesive layer, the adhesive layer is bonded to one surface of the frame, and
the method for manufacturing an electronic device comprises: bonding a plurality of semiconductor parts to the surface of the adhesive layer that is exposed via the opening of the electronic-device-protecting member with the semiconductor parts set apart from each other; subsequently covering the semiconductor parts and the surface of the adhesive layer with a sealant; and fixing by suction of a side of a base layer of the electronic-device-protecting film to a heated chuck table, and heat-curing the sealant to obtain an electronic device in which the semiconductor parts are sealed in an array configuration, and wherein
the ratio R_E (= E'(160)/E'(50)) of the tensile elastic modulus E'(160) of the base layer constituting the electronic-device-protecting film at 160°C with respect to the tensile elastic modulus E'(50) of the base layer at 50°C is such that $0.05 < R_E < 1$.

9 The electronic-device-protecting member according to claim 8, wherein the adhesive constituting the adhesive layer has the storage elastic modulus G'(150) at 150°C of 1×10^4 to 500×10^4 Pa.

10 The electronic-device-protecting member according to claim 8, wherein the adhesive layer has an adhesive force to a silicon wafer of 0.1 to 10 N/25 mm which is measured according to JIS Z 0237.

11 The electronic-device-protecting member according to claim 8, wherein the base layer includes one or two or more resins selected from the group consisting of polyimide, polyethylene naphthalate and polyethylene terephthalate.

12 A method for manufacturing an electronic device comprising:
an electronic-device-protecting member forming step of forming an electronic-device-protecting member by bonding an adhesive layer of an electronic-device-protecting film to one surface of a ring frame which is a frame having an opening, the adhesive layer being bonded so as to cover the opening;

a semiconductor-part bonding step of bonding a plurality of semiconductor parts to the surface of the adhesive layer that is exposed via the opening with the semiconductor parts set apart from each other;
a sealant-covering step of covering the semiconductor parts and the surface of the adhesive layer with a sealant; and
a heat-curing step of fixing by suction of a side of a base layer of the electronic-device-protecting film to a heated chuck table, and heat-curing the sealant to obtain an electronic device in which the semiconductor parts are sealed in an array configuration, wherein
the electronic-device-protecting film includes a base layer and the adhesive layer, and
in the base layer, the ratio R_E (= E'(160)/E'(50)) of the tensile elastic modulus E'(160) at 160°C to the tensile elastic modulus E'(50) at 50°C is such that $0.05 < R_E < 1$.

13 The method for manufacturing an electronic device according to claim 12, wherein the adhesive constituting the adhesive layer has the storage elastic modulus G'(150) at 150°C of 1×10^4 to 500×10^4 Pa.

14 The method for manufacturing an electronic device according to claim 12, wherein the adhesive layer has an adhesive force to a silicon wafer of 0.1 to 10 N/25 mm which is measured according to JIS Z 0237.

15 The method for manufacturing an electronic device according to claim 12, wherein the base layer includes one or two or more resins selected from the group consisting of polyimide, polyethylene naphthalate and polyethylene terephthalate.

16 The method for manufacturing an electronic device according to claim 12 further comprising an interconnection-layer forming step of forming an interconnection layer on the electronic device in which the semiconductor parts are sealed in an array configuration.

17. The method for manufacturing an electronic device according to claim 16 further comprising a segmenting step of separating, into segments, the electronic device in which the semiconductor parts are sealed in an array configuration on which the interconnection layer is formed.

18. A method for manufacturing a package comprising a mounting step of mounting the electronic device according to claim 17 on a substrate.