CLAIMS

1. An adhesive composition comprising a polyimide (A), a polyfunctional epoxy compound (B), an epoxy curing agent (C), and inorganic particles (D), wherein the polyimide (A) has at least one functional group capable of reacting with an epoxy group on its side chain, the polyfunctional epoxy compound (B) contains a liquid epoxy compound and a bisphenol A epoxy resin having an epoxy equivalent weight of 1000 or more and 7000 or less, the epoxy curing agent (C) is an imidazole-based curing agent,

the ratio of the polyimide (A) in a nonvolatile organic component is ~~3~~5.0 wt% or more and 30 wt% or less,

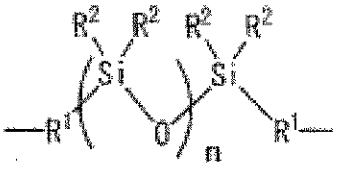
the ratio of the liquid epoxy compound in the nonvolatile organic component is 10 wt% or more and 50 wt% or less,

the ratio of the bisphenol A epoxy resin in the nonvolatile organic component is 20 wt% or more and 70 wt% or less,

the ratio of the epoxy curing agent (C) in the nonvolatile organic component is 1.0~~0.5~~ wt% or more and 10 wt% or less, and T/M is 400 or more and 8000 or less when the total number of grams of the nonvolatile organic component is denoted by T, and the number of moles of epoxy groups in the nonvolatile organic component is denoted by M.

2. The adhesive composition according to claim 1, wherein the polyimide (A) has a structure represented by a general formula (2) or a general formula (3), has at least one functional group capable of reacting with an epoxy group on its side chain, and has a structure represented by a general formula (1) as R^4 in the general formula (2) or the general formula (3) in an amount of 5 wt% or more and 15 wt% or less with respect to the total amount of polymers:

[Chemical Formula 1]



(1)

contained in different polyimide molecules. X represents a monovalent organic group. m is 8 to 200. α and β each represent an integer of 0 to 10 and $\alpha + \beta$ is an integer of 0 to 10; however, 20 to 90 % of the structural units whose repeating number is m show $\alpha + \beta$ = 1 to 10.

~~3. The adhesive composition according to claim 1 or 2, wherein as the polyfunctional epoxy compound (B), at least an epoxy compound having an epoxy equivalent weight of 1000 or more and 7000 or less is used.~~

~~4. The adhesive composition according to claim 3, wherein as the polyfunctional epoxy compound (B), a liquid epoxy compound is further used.~~

3. The adhesive composition according to claim 2, wherein n in the general formula (1) is an integer of 1 to 2.

~~5~~4. The adhesive composition according to any one of claims 1 to ~~4~~3, wherein the content of the inorganic particles (D) in a nonvolatile component is 50 wt% or more and 80 wt% or less.

~~6~~5. The adhesive composition according to any one of claims 1 to ~~5~~4, wherein the elastic modulus at -40°C of the cured adhesive composition is 10 GPa or more and 15 GPa or less.

~~7~~6. The adhesive composition according to any one of claims 1 to ~~6~~5, wherein the maximum strength at 23°C of the cured

adhesive composition is 28 N or more.

~~8~~7. An adhesive film having a layer composed of the adhesive composition according to any one of claims 1 to ~~7~~6, and a support film.

~~9~~8. A substrate provided with the adhesive composition having a layer composed of the adhesive composition according to any one of claims 1 to ~~7~~6, and a substrate.

~~10~~9. A semiconductor device having a layer composed of the adhesive composition according to any one of claims 1 to ~~7~~6.

~~11~~10. A method for producing a semiconductor device in which the adhesive composition according to any one of claims 1 to ~~7~~6 is interposed between a first circuit member and a second circuit member, and the first circuit member is electrically connected to the second circuit member by heating/applying pressure to the adhesive composition.