

LAMINATE, SEMICONDUCTOR ELEMENT, AND MEMS ELEMENT

ABSTRACT

SiO_2 , which is a material in conventional insulation layers, has presented the problem of weak bonding strength. Additional problems were presented in terms of poor electroconductivity of electrodes and reduced reliability of a resulting laminate due to voids caused by microscopic foreign matter being caught in the bonding interface. Provided is a laminate in which a first substrate, which is provided with (A-1) a metal electrode and (B-1) a resin layer that are exposed on the same surface of the substrate body, and a second substrate, which is provided with (A-2) a metal electrode and (B-2) a resin layer that are exposed on the same surface of the substrate body or with the (A-2) metal electrode and (C) an inorganic insulation layer that are exposed on the same surface of the substrate body, are affixed together so that at least a portion of the (A-1) metal electrode and the (A-2) metal electrode and at least a portion of the (B-1) resin layer and the (B-2) resin layer, or at least a portion of the (A-1) metal electrode and the (A-2) metal electrode and at least a portion of the (B-1) resin layer and the (C) inorganic insulation layer, are each directly bonded, wherein at least one of the (B-1)

resin layer and the (B-2) resin layer contains a resin having one or more selected from the group consisting of carbonyl groups, hydroxyl groups, alkylene oxide groups, groups having siloxane bonds, and nitrogen-containing heterocycles.

Figure 2