Claims

1. A method for the connection of electronic components, in which (a) a sandwich arrangement is provided, which comprises at least (a1) an electronic component 1, (a2) an electronic component 2, and (a3) a metal sintering preparation being situated between metal contact surfaces of the electronic components 1 and 2, and in which (b) the sandwich arrangement is being pressureless sintered,

wherein the method takes place in an ambient gas atmosphere, and wherein an exchange of the ambient gas atmosphere is made within the course of the pressureless metal sintering process,

wherein step (b) comprises three successive sub-steps (b1) to (b3), namely, a heating-up sub-step (b1), a sub-step (b2) at peak temperature, and a cooling-down sub-step (b3), wherein at least sub-steps (b1) and (b2) are carried out in an oven,

wherein the exchange of the ambient gas atmosphere is made either within sub-step (b2) or at the start of sub-step (b3), and

wherein the exchange of the ambient gas atmosphere means an exchange of an ambient non-oxidizing gas atmosphere by an ambient oxidizing gas atmosphere or vice versa.

2. The method of claim 1, wherein electronic components 1 and/or 2 have a non-precious metal contact surface, wherein the non-precious metal is copper, nickel or aluminum.

3. The method of claim 1 or 2, wherein the metal sintering preparation is a metal sintering preform or a metal sintering paste.

4. The method of any one of the preceding claims, wherein the exchange of the ambient gas atmosphere happens once or more than one time.

5. The method of any one of the preceding claims, wherein the exchange of the ambient gas atmosphere is made by purging the inner of the oven or by only partially displacing it in the oven by injecting a gas or gas mixture of different composition into the oven.