

SUPPORT-SUBSTRATE FOR ELECTRONIC CIRCUITS

FIELD OF THE INVENTION

5 The invention relates to a support material for printing electronic circuits by means of the inkjet printing process with electrically conductive inks.

TECHNICAL BACKGROUND OF THE INVENTION

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An essential step in the production of electronic devices and circuits is the manufacture of conductive connections between the components. These connections must follow a predetermined structure in order that the componentry or the device can
15 carry out its intended function. Such structures can be manufactured from conductive materials in a variety of manners, usually from metals or carbon (graphite). Printing processes are particularly suitable for cheap mass production, whereby the circuits are produced by depositing
20 printing inks which contain the conductive materials onto flat electrically insulating, preferably flexible support materials in a single operational step.

When manufacturing electronic circuits, inkjet printing
25 technology can be employed. This means that electrically conductive structures can be deposited on insulating support materials, or components which have already been deposited can be conductively connected, whereby in contrast to other printing techniques such as screen printing, a previously
30 prepared printing mask does not have to be produced; thus, it is possible to carry out manufacturing on a small mass-production scale, or even to manufacture single parts, simply

Claims

1. A support material for printing electronic circuits by means of the inkjet printing process with electrically conductive inks, comprising a base material selected from paper, nonwoven and polymer film and an outer microporous layer arranged on at least one side of the base material, wherein the microporous layer has pores with a mean pore size of less than 100 nm and wherein at least one further layer is arranged between the base material and the microporous layer.
2. The support material according to claim 1, wherein the mean pore size of the layer is in the range 5 nm to 50 nm.
3. The support material according to claim 1, wherein the roughness of the surface of the microporous layer is less than 1 μm , measured as the Rz parameter in accordance with DIN 4768.
4. The support material according to claim 1, wherein the microporous layer contains an inorganic pigment and a hydrophilic binding agent.
5. The support material according to claim 4, wherein the inorganic pigment is silicon oxide, aluminium oxide or aluminium oxide hydrate.
6. The support material according to claim 1, wherein the microporous layer is present as a foam.
7. The support material according to at least one of claims 1 to 6, wherein the base material is a base paper.