CONVENTION OR NON-CONVENTION APPLICATION FOR A PATENT OR PATENT OF ADDITION

X/We(a) VDO ADOLF SCHINDLING AG

558001

of(b) Grafstrasse 103, 6000 Frankfurt/Main 90, Germany

hereby apply for the grant of a (c) patent/patent of addition for an invention entitled (d) SOLDERABLE LAYER SYSTEM

which is described in the accompanying (c) provisional/complete specification.

We request that the patent may be granted as a patent of addition to the patent applied for on application No. 73109/81 in the name of VDO ADOLF SCHINDLING AG.

We request that the term of the patent of addition be the same as that of the patent for the main invention or so much of the term of the patent for the main invention as is unexpired.

This application is a Convention application and is based on the following application or applications for a patent or patents or similar protection made in the following country or countries on the following date or dates:

No. P3110978.0 in (h) Germany on (i) 20 March 1981

No. (g) in (h) on (i) 19

Our address for service is care of CLEMENT HACK & CO., Patent Attorneys, 140 William Street, Melbourne, Victoria, 3000, Australia.

Dated this 5th day of MARCH 1982

LOSTED AT SUB-OFFICE

(k) VDO ADOLF SCHINDLING AG

Melbourne

CLEMENT HACK & CO.
DETECTION IN SUPPORT OF A CONVENTION OR NON-CONVENTION APPLICATION FOR A PATENT OR PATENT OF ADDITION

Name(s) and address(es) of person(s) making the declaration

In support of the application made by VDO Adolf Schindling AG for a patent for an invention entitled SOLDERABLE LAYER SYSTEM

I/We Herbert Köhlmüller Im Henk 14 6242 Hönberg Germany do solemnly and sincerely declare as follows:

1. I am/we are the applicant(s) for the patent or am/are authorised by the abovementioned applicant to make this declaration on its behalf.

2. The basic application(s) as defined by Section 141 of the Act was/were made in the following countries on the following date(s) by the following applicant(s) namely:

<table>
<thead>
<tr>
<th>Country, filing date and name of Applicant(s) for the or each basic application</th>
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<tr>
<td>in Germany on March 20, 1981 by VDO Adolf Schindling AG</td>
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3. The said basic application(s) was/were the first application(s) made in a Convention country in respect of the invention the subject of the application.

4. The actual inventor(s) of the said invention is/are Friedrich Wilhelm Nickel Am Honigbaum 35 6239 Einstein Germany

5. The facts upon which the applicant(s) is/are entitled to make this application are as follows:

   The applicant would have been entitled to have assigned to it a patent granted to the actual inventor in respect of the said invention.

DECLARED at Schwalbach this 17th day of December 1981

Herbert Köhlmüller

This form may be completed and filed after the filing of a patent application but the form must not be signed until after it has been completely filled in as indicated by the marginal notes. The
Claim

1. A corrosion-protection layer system as claimed in Claim 1 of patent No. 549,316 characterised in that the solderable layer and the corrosion-protection layer are deposited as a single layer which incorporates a corrodbile metal, and in that in the high-temperature oxidation process the said corrodbile metal is oxidised, at least at the surface of the solderable layer, to form the corrosion-protection layer.

2. A corrosion-protection layer system according to Claim 1 above, characterised in that the corrodbile metal is indium, tin or indium and tin.
AUSTRALIA

PATENTS ACT 1952

COMPLETE SPECIFICATION

(ORIGINAL)

FOR OFFICE USE

Short Title:

Int. Cl:

Application Number: Lodged:

Complete Specification—Lodged:

Accepted:

Lapsed:

Published:

Priority:

Related Art:

TO BE COMPLETED BY APPLICANT

Name of Applicant: VDO ADOLF SCHINDLING AG

Address of Applicant: Grafstrasse 103, 6000 Frankfurt/Main 90, Germany

Actual Inventor: Friedrich Wilhelm Nickol

Address for Service: CLEMENT HACK & CO.,
140 William Street,
Melbourne, Vic. 3000,
Australia.

Complete Specification for the invention entitled:

"SOLDERABLE LAYER SYSTEM"

The following statement is a full description of this invention, including the best method of performing it known to me:—
This invention relates to an improvement in or modification of the invention which is the subject of Australian Patent No. 549,316. The specification of this patent describes and claims a corrosion-protection layer system for providing a solderable connection point for a contactor layer which is not solderable, said layer system being deposited on a carrier and consisting of a solderable layer and a corrosion-protection layer, said solderable layer being covered and protected against oxidation by said corrosion-protection layer, characterised in that the corrosion-protection layer consists of a corrodbile metal, that the layers deposited on the carrier are passed through a high-temperature oxidation process, and in that the corrosion-protection layer is removable after the high-temperature process to enable a soldering process then to be performed.

More particularly, this previous invention envisaged the application of the solderable layer in one step and the application of the corrosion-protection layer as a subsequent separate step.
The present invention is based on the realization that the corrosion-protection layer can be provided by incorporating in the solderable layer a corrodible metal which, in the high temperature oxidation process, is oxidised at least at the surface of the solderable layer. Thus the corrosion-protective layer is formed in a simple fashion without the need for it to be applied in a separate step. This gives a saving in protection time and also leads to further savings by making it unnecessary to provide equipment for applying a separate corrosion-protective layer.

Preferably the corrodible metal is indium, tin, or indium and tin.

Embodiments of the invention are described in the following and illustrated in the drawings, wherein;

Figure 1 shows a first embodiment of a layer system in accordance with the invention;

Figure 2 a second embodiment of a layer system in accordance with the invention.

The solderable layer systems 3 and 3' illustrated in the Figures are applied on a carrier made of glass, which carrier serves as a wall of a liquid crystal cell.

On the carrier a conducting layer of a thickness of preferably 250 - 15000 A is applied which layer can consist of indium-tin oxide. For this non-solderable conducting layer 2 the layer systems 2 and 3' form solderable connecting points, via which, for instance, the connections of integrated circuits in the forms of chips can be connected to the conducting layer 2.

In the layer system 3 illustrated in Figure 1 a soldering layer 4, consisting of copper or iron with portion of, for instance, indium and tin is applied directly on the conducting layer 2, while in Figure 2 between the soldering layer 4 and the conducting layer 2 an additional adhesion promoting layer 5, which strengthens the adhesion to the
carrier 1 and which consists of chromium, titanium or aluminium, is arranged.

For the protection against oxidation the conducting layer 4 is provided at its free surface with a corrosion protection layer 6 or 6' respectively.

This corrosion protection layer 6 or 6' respectively is formed in that the layer system applied on the carrier 1 is subjected to a high temperature process and in the course of the process the indium and tin is oxidised in the peripherical region of the soldering layer 4.

Further oxidation of the soldering layer 4 through the protective corrosion protection layer 6 or 6' respectively is not thereafter possible.

Thus in the way in accordance with the invention a corrosion protection of the soldering layer 4 is achieved without essential expense.

An exactly defined thickness of the corrosion protection layer 6 or 6' respectively can be achieved by the suitable selection of temperature and via the duration of the high temperature process.
CLAIMS
THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A corrosion-protection layer system as claimed in Claim 1 of patent No. 549,316 characterised in that the solderable layer and the corrosion-protection layer are deposited as a single layer which incorporates a corrodible metal, and in that in the high-temperature oxidation process the said corrodible metal is oxidised, at least at the surface of the solderable layer, to form the corrosion-protection layer.
2. A corrosion-protection layer system according to Claim 1 above, characterised in that the corrodible metal is indium, tin or indium and tin.

DATED this 5th day of November, 1986

VDO ADOLF SCHINDLING AG.
By Its Patent Attorneys
CLEMENT HACK & CO.,