

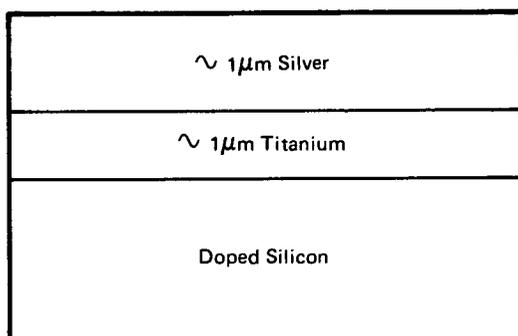
NASA TECH BRIEF

NASA Headquarters

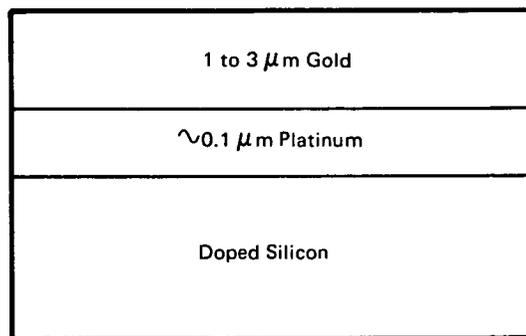


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Humidity Resistant Solar Cell Contacts



Present Solar-Cell Contact



Proposed Solar-Cell Contact

The problem:

The present silver-titanium solar-cell contacts are protected with solder to avoid damage in humid environments. To decrease weight, solderless silver-titanium contacts were tried, but they degraded in humid environments.

The solution:

A gold-platinum contact was developed, as shown in the figure, which does not exhibit the chemical reactivity of titanium or the porosity of silver. This contact offers excellent ohmic characteristics and stability in humid air.

How it's done:

Approximately 0.1 μm of platinum is sputtered onto the doped silicon layer. The assembly is sintered in vacuum to form a platinum-silicide ohmic contact which has a good mechanical adhesion to silicon. Afterwards,

1 to 3 μm of gold is evaporated or electroplated onto the platinum to form the finished contact.

Note:

Requests for further information may be directed to:
 Technology Utilization Officer
 NASA Headquarters
 Code KT
 Washington, D.C. 20546
 Reference: B72-10517

Patent status:

No patent action is contemplated by NASA.

Source: C. J. Bishop of
 Boeing Corp.
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Category 04