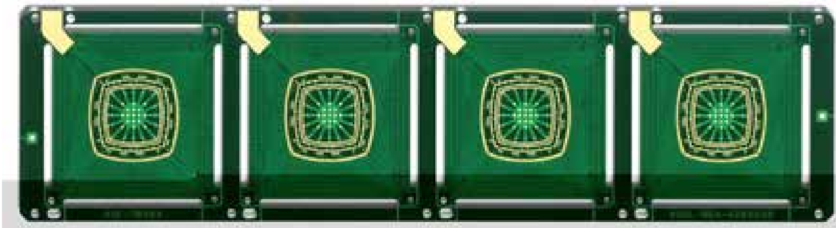
Application Note

PiNK®

Leadframe treatment

Plasma cleaning of leadframes before wire bonding



Application

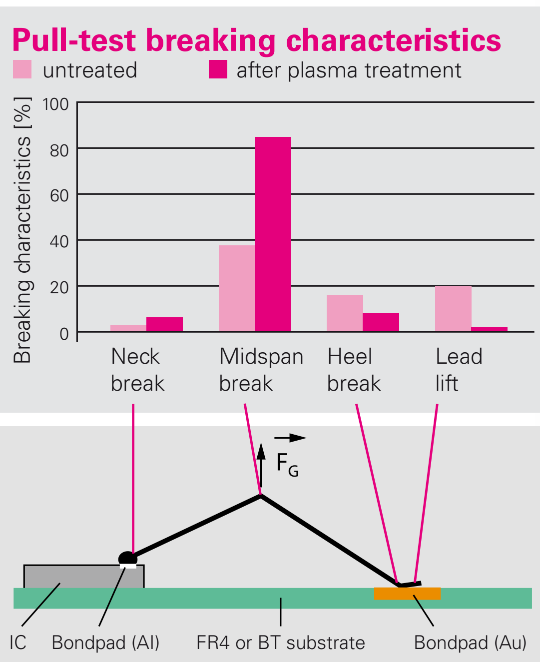
The level of surface contamination is crucial to the adhesion between bond pad and wire. The best quality and maximum adhesion of bond contacts are bound to ultimate cleanliness of bond pads, particularly regarding organic contaminations. Low-pressure plasma treatment yields the necessary level of cleanliness. For most applications, even the treatment of leadframes loaded into magazines is successful.

Plasma process

Organic trace residues are removed by plasma in a dry and cool chemical reaction which yields small gaseous compounds. Bond quality is enhanced dramatically (see diagram). Avoiding unwanted effects like formation of metal oxides on leadframes is a matter of process engineering.

Systems engineering

Plasma is formed applying microwaves and small amounts of pure gases inside a vacuum chamber. This is how treatment of leadframes inside magazines can be realized while thermal effects on the substrates are minimized. V80-G is a typical example for low-pressure plasma systems employed in leadframe cleaning. Plasma systems can be customized for any requirements including automation.



Plasma cleaning shifts the breaking characteristics from the bond pads to the wires (test acc. to MIL-STD 883D).

The V80-G unit is suitable for plasma cleaning of leadframes before wire bonding.

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