CLAIMS

1. A lead frame support plate for a wire bonding machine; the lead frame support plate comprising
a support surface for supporting a lead frame;
an array of vacuum holes through which a vacuum force is to be applied;
a network of suction grooves provided on the support surface, each suction groove being arranged to be in fluid communication with at least a said vacuum hole to enable a suction force to be created, in response to the vacuum force, along the network of suction grooves for holding the lead frame against the support surface.

2. A lead frame support plate according to claim 1, wherein the network of suction grooves includes a combination of linear and diagonal suction grooves.

3. A lead frame support plate according to claim 1, wherein the suction grooves are hemispheric.

4. A lead frame support plate according to claim 1, wherein the suction grooves have a maximum depth of about 0.026mm.

5. A lead frame support plate according to claim 1, further comprising a series of side bores extending between a first edge to a second edge of the support plate's body; the series of side bores arranged to intersect with respective vacuum holes.

6. A wire bonding machine comprising a lead frame support plate according to claim 1.

7. A method of fabricating a lead frame support plate for a wire bonding machine, the lead frame support plate comprising a body having a support surface for supporting a lead frame and an array of vacuum holes through which a vacuum force is to be applied, the method comprising
forming a network of suction grooves on the support surface with each suction groove being in fluid communication with at least a said vacuum hole to enable a suction force to be created, in response to the vacuum force, along the

network of suction grooves for holding the lead frame against the support surface.

8. A method according to claim 7, further comprising forming the array of vacuum holes.

9. A method according to claim 7, further comprising forming a series of side bores which extends between a first edge to a second edge of the support plate's body; wherein the series of side bores are arranged to intersect with respective vacuum holes.

10. A window clamp for a wire bonding machine, comprising
an array of wire bonding windows having corresponding apertures configured to register with respective semiconductor dies, the array of wire bonding windows having two furthermost windows along a longitudinal axis; and
a pair of slots disposed on each side of the array, each slot having an elongate portion defined by a first end and a second end, the first and the second ends extending at least between the apertures of the two furthermost windows.

11. A window clamp according to claim 10 wherein each slot is generally C-shape with arm portions extending respectively from the first and second ends and generally orthogonal to the elongate portion.

12. A window clamp according to claim 10, wherein the first and second ends extend to farthest edges of the apertures of the two furthermost windows.

13. A window clamp according to claim 10, wherein the array of wire bonding windows includes a plurality of rows of windows, and wherein a first row and a last row of the plurality of rows respectively includes the two furthermost windows.

14. A window clamp according to claim 10, wherein the apertures and the corresponding wire bonding windows are the same size.

15. A window clamp according to claim 10, wherein the size of the wire bonding windows is greater than the corresponding apertures.

16. A wire bonding machine comprising a window clamp of claim 10.

CLAIMS

1. A window clamp for a wire bonding machine, the window clamp comprising:

an array of wire bonding windows having corresponding apertures configured to register with respective semiconductor dies, the array of wire bonding windows having two furthermost windows along a longitudinal axis; and

a pair of slots disposed on each side of the array, each slot having an elongate portion defined by a first end and a second end, the first and the second ends extending at least between the apertures of the two furthermost windows,

wherein each slot further comprises arm portions extending respectively from the first and second ends, and the arm portions are generally orthogonal to the elongate portion.

2. A window clamp according to claim 1, wherein the first and second ends extend to farthest edges of the apertures of the two furthermost windows.

3. A window clamp according to claim 1 or claim 2, wherein the array of wire bonding windows includes a plurality of rows of windows, and wherein a first row and a last row of the plurality of rows respectively includes the two furthermost windows.

4. A window clamp according to any one of the preceding claims, wherein the apertures and the corresponding wire bonding windows are the same size.

5. A window clamp according to any one of the preceding claims, wherein the size of the wire bonding windows is greater than the corresponding apertures.

6. A wire bonding machine comprising a window clamp of any one of the preceding claims.

7. A window clamp for a wire bonding machine, comprising

an array of wire bonding windows having corresponding apertures configured to register with respective semiconductor dies, the array of wire bonding windows comprising two furthermost windows along a longitudinal axis; and

a pair of slots disposed on each side of the array, each slot having an elongate portion defined by a first end and a second end, the first and the second ends extending at least between the apertures of the two furthermost windows,

wherein each slot is generally C-shaped with arm portions extending respectively from the first and second ends and generally orthogonal to the elongate portion.