

Remarks

Applicants thank Examiner Sollenberger for his careful examination of this application and clear explanation of the claim rejections. In response to the Office Action of January 8, 2009, Applicants respectfully amend the claims as follow to overcome the rejection:

1. Claim 15 is amended to add the limitations that the polymer film lines the multiple shape-forming parts of the upper die and it contacts a conductive land on the first principal surface. These added limitations distinguish claim 15 from the Juskey patent, the Yamaji patent, and the Ujiie patent for the reasons presented below:

The Juskey patent teaches a measure for preventing cracking of ceramic substrate during molding process. The measure involves attaching the ceramic substrate to a “flexible temporary support substrate by means of an adhesive.”¹ During the molding process, the mold dies clamp on the support substrate instead of on the more fragile ceramic substrate and hence the integrity of the ceramic substrate can be preserved. The last step of the molding process is “peeling the temporary support substrate from the circuit substrate.”² It is clear that in Juskey the “flexible film” is a temporary part of the package and will be peeled off at the completion of the molding process. The flexible film is clearly not an insulating region “of” the lower die, or a part of the lower die, as required in claim 15. In addition, as explained in the Office Action, Juskey does not disclose a polymer film.

The Yamaji patent discloses a semiconductor device that uses a flexible insulating film with wiring layers built in it to connect a chip to a substrate. Not only does this insulating film not line the multiple shape-forming parts of a upper die, but it also will be impossible to combine this

¹ US 5,218,759 Abstract.

² Id.

insulating film with wiring layers built in to the method of making a transfer molded semiconductor device as disclosed in the Juskey patent.

Finally, the Ujiie patent discloses a manufacturing method of a conductor device, in which a polymer film is held by suction on the upper die. However, the polymer film in the Ujiie patent does not contact a conductive land on the first principal surface, as required in claim 15.

In summary, none of the references cited in the Office Action disclose a lower die of which an insulating region is a part and none of the references discloses a film pressed by the upper die that comes in contact with a conductive land on the substrate. Because the cited references do not disclose all the elements in claim 15, they, either standing alone or in combination, cannot render claim 15 obvious.

2. Claim 20 is amended so it is congruent to claim 15, from which it depends.
3. Claim 21 is amended to correct a typographical error. As amended, claim 21 properly depends from claim 20.
4. Claims 23 and 24 are amended so they properly depend from claim 15.
5. Claim 25 is amended so it properly depends from claim 20.
6. New claims 26 through 29 are inserted. Claim 26 requires a ceramic region enclosed by an o-ring in a lower die. This element is fully supported in the original specification and drawings; and it is not disclosed in any of the cited references.

Finally, Applicants respectfully submit that claim 16 stands patentable over the cited Juskey patent and Yamaji patent because there is no disclosure in either patent of a lower die that includes a ceramic member; or a second principal surface of the substrate mounted on the ceramic member. The only ceramic element in the Juskey patent is the substrate on which the semiconductor chip is attached. This ceramic substrate is then attached with

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adhesive to the flexible film. Therefore, the ceramic member is not in the lower die and it is not mounted on the substrate to which the semiconductor element is placed.

In a separate paper filed today, Applicants filed a Request to Retrieve Electronic Priority Application(s) to comply with the previous claim of priority.

In light of the amendment and the remarks presented above, Applicants respectfully request further examination of this application and timely allowance of all pending claims.

Respectfully submitted,
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