

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte JONG SIK PAEK

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Appeal No. 2006-0450  
Application No. 10/044,141

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ON BRIEF

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Before BARRETT, LEVY, and MACDONALD, Administrative Patent Judges.  
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-21, which are all of the claims pending in this application.

We AFFIRM.

BACKGROUND

The appellant's invention relates to a semiconductor package with stacked dies (specification, page 1).

Claim 1 is representative of the invention, and is reproduced as follows:

1. A semiconductor package comprising:
  - a plurality of leads, each of the leads defining:
    - a generally planar first surface;
    - a generally planar second surface disposed in opposed relation to the first surface; and
    - a generally planar third surface disposed in opposed, substantially parallel relation to the second surface and laterally offset outwardly relative to the first surface;
    - a first semiconductor die defining opposed top and bottom surfaces;
    - a second semiconductor die defining opposed top and bottom surfaces;
    - a plurality of conductive connectors electrically and mechanically connecting the first semiconductor die to the first surfaces of the leads and the second semiconductor die to the second surfaces of the leads; and
    - an encapsulating portion applied to and at least partially encapsulating the leads, the first and second semiconductor dies, and the conductive connectors such that at least the first and second surfaces of each of the leads are covered by the encapsulating portion.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Lee	6,157,074	Dec. 5, 2000
Chun-Jen et al.	6,337,510	Jan. 8, 2002
Takahashi (Japanese Reference)	JP 05-206219	Aug. 13, 1993

Claims 1-6 and 11-21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Chun-Jen.

Claims 7 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chun-Jen in view of Takahashi.

Claims 8 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chun-Jen in view of Takahashi and further in view of Lee.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the answer (mailed August 24, 2005) for the examiner's complete reasoning in support of the rejections, and to the brief (filed January 27, 2005) for the appellant's arguments thereagainst.

Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could

have made but chose not to make in the brief have not been considered. See 37 CFR § 41.37(c)(1)(vii) (eff. Sept. 13, 2004).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer. Upon consideration of the record before us, we make the determinations which follow.

We begin with the rejection of claims 1-6 and 11-21 under 35 U.S.C. § 102(e) as being anticipated by Chun-Jen. It is well settled that if a prior art device inherently possesses the capability of functioning in the manner claimed, anticipation exists whether there was a recognition that it could be used to perform the claimed function. See, e.g., In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

Appellant asserts (brief, page 6) that Chun-Jen does not teach "*a generally planar third surface disposed in opposed,*

*substantially parallel relation to the second surface and laterally offset outwardly relative to the first surface"* (emphasis and underlining original), as recited in claim 1. The examiner responds (answer, page 16) that this limitation is met, as shown in the diagram provided on page 16 of the answer, since first surface A is facing downward and surface B is facing upward. The examiner adds that the limitation is met because A and B are on opposite sides of an imaginary center line, and that "[a]s such, it is not clear how C, which is laterally offset from A and, like A, is facing downward (or, like A is on the opposite side of the imaginary center line), is not opposed to B."

Figure 5 of Chun-Jen reveals that the top surface of finger 322 of lead 320, relied upon by the examiner to show the claimed second planar surface, is longitudinally offset to the right of the lower surface of the lead 320, relied upon by the examiner as the third planar surface. Thus, the issue arises as to what is needed to meet the term "opposed" as it appears in claim 1. From our review of the specification, we find that although the term is used in the description of the invention, there is no specific definition for the term "opposed." Thus, the term should be construed as it would have been understood by an artisan. "The general rule is, of course, that terms in the claim are to be given their ordinary and

accustomed meaning." Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989, 50 USPQ2d 1607, 1610 (Fed. Cir. 1999) (citing Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249, 48 USPQ2d 1117, 1121 (Fed. Cir. 1998); York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 USPQ2d 1619, 1622 (Fed. Cir. 1996)). "It is well settled that dictionaries provide evidence of a claim term's 'ordinary meaning.'" Inverness Med. Switz. GmbH v. Warner Lambert Co., 309 F.3d 1365, 1369, 64 USPQ2d 1926, 1930 (Fed. Cir. 2002).

From our review of McGraw-Hill Dictionary of Scientific and Technical Terms, Fifth Edition, ©1994, we find no definition for the term "opposed." Turning to a non-technical dictionary, we find from Webster's Third New International Dictionary, ©1993<sup>1</sup>, that "opposed" means opposite. However, we do not find that opposed requires that the surfaces be directly opposed. Claim 16, which depends from claim 1, recites "wherein each of the leads further defines a fourth surface disposed in opposite relation to the third surface and laterally offset outwardly relative to the second surface." From the language of claim 16, we find that the claim is directed to the embodiment of figure 2, where the third surface, while opposed to the second surface, is not directly opposed to the second surface, as in the embodiment

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<sup>1</sup> A copy of the pertinent page is enclosed with our Decision.

of figure 1. As claim 16 depends from claim 1, we find that claim 1 must also cover the embodiment of figure 2. Reading claims 1 and 16 on figure 2, we find that the claim is met by Chun-Jen, as advanced by the examiner in the rejection. The only alternative to this interpretation of the claims would be to find the claims indefinite as claiming in claim 16, an alternate embodiment which is mutually exclusive from the embodiment that claim 1 is directed to. We decline to find this indefiniteness as the examiner has not raised this issue on appeal. If appellant believes from our findings that claim 16 is indefinite, then appellant has then option of refiling the case and amending the claims as necessary. From all of the above, we find that the teachings of Chun-Jen anticipate claim 1. The rejection of claim 1 under 35 U.S.C. § 103(a) as being anticipated by Chun-Jen under 35 U.S.C. § 102 is affirmed. As claims 2-6 and 11-21 have not been separately argued, the rejection of claims 2-6 and 11-21 under 35 U.S.C. § 102 is affirmed.

We turn next to the rejection of claims 7 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Chun-Jen in view of Takahashi. The examiner's position (answer, page 15) is that Chun-Jen does not disclose the claimed protective layers. To overcome this deficiency of Chun-Jen, the examiner turns to

Takahashi for a teaching of this feature, for the purpose of preventing short circuits.

Appellant (brief, page 10) does not argue the combinability of the references, but rather argues to the effect that Takahashi does not teach the first and second protective layers as recited in the claim, and that Takahashi does not teach forming a protective layer on the surface of a lead other than the prescribed region including a bump land. We disagree. Firstly, Chun-Jen is relied upon for the two leads and the bump lands, as well as the solder joints. Takahashi (figure 1) is relied upon for the teaching of the protective layers. Takahashi discloses a single semiconductor layer 16 and lead 10 in figure 1. In addition, we find from the disclosure of Takahashi (pages 1 and 2), that:

that the surface of a plated layer 12 of an inner lead 10 of a film carrier system package is covered with an insulative coating film 13. When the inner lead 10 is bonded to a semiconductor element 16, the insulative coating film 13 only at the bonding part of the inner lead 10 is inner lead 10 is bonded to a protruding type electrode 17 of a semiconductor element 16. Hence electric troubles due to short-circuit are not generated, when the gap between the inner lead 10 and the semiconductor element 16 is made very narrow, or

even when the inner lead 10 comes into contact with the semiconductor element. When the inner lead 10 is bent and brought into contact with the adjacent inner lead 10, short-circuit can be prevented by forming the insulative coating film 13."

From this disclosure that the protective layer is melted only at the bonding part during the bonding process, we find that Takahashi would have suggested to an artisan the following language of claim 6:

a first protective layer formed on at least a portion of the first surface thereof other than for the prescribed region including the first bump land; and

a second protective layer formed on at least a portion of the first second surface thereof other than for the prescribed region including the second bump land.

Accordingly, the rejection of claim 7 under 35 U.S.C. § 103(a) is affirmed.

Turning to claim 9, appellant asserts (brief, pages 11 and 12) that in Takahashi, if the insulative coating film does not sufficiently melt, a good electrical connection is not assured. We are not persuaded by appellant's assertion because there is no evidence in the record of the protective layer failing or possibly failing to melt at the bond area. We find appellant's assertion to be unfounded speculation, unsupported by evidence in the record, and will sustain the rejection of claim 9 for the reasons we affirmed claim 7.

We turn next to the rejection of claims 8 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Chun-Jen in view of Takahashi and further in view of Lee. The examiner's position (answer, page 15) is that Chun-Jen and Takahashi do not teach the specific composition of the protective layer. The examiner turns to Lee for a teaching of a protective layer that includes a polyimide. Appellant (brief, page 13) does not present any arguments with respect to this rejection other than to base the patentability of the claims on the patentability of claims 7 and 9. From our review of the record, we are not persuaded of any error on the part of the examiner, and agree with the examiner for the reasons set forth in the rejection. The rejection of claims 8 and 10 under 35 U.S.C. § 103(a) is affirmed.

## CONCLUSION

To summarize, the decision of the examiner to reject claims 1-21 under 35 U.S.C. § 103 is affirmed.

AFFIRMED

SSL/tf

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**Comment [jvn1]:** Type address

APPEAL NO. 2006-0450  
APPLICATION NO. 10/044,141

APJ LEVY

APJ BARRETT

APJ MACDONALD

DECISION: AFFIRMED

PREPARED: Aug 29, 2006

OB/HD

PALM:

ACTS 2:

DISK (FOIA):

REPORT:

BOOK:

GAU:

44C1:

IFW in E. Cook's Incoming: