

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte TONGLONG ZHANG and JOHN BRIAR

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Appeal No. 2004-0710  
Application No. 09/726,260

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ON BRIEF

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Before KIMLIN, GARRIS and TIMM, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 11-20.

Claim 11 is illustrative:

11. An electronic circuit package, comprising:

a single integrated circuit element having a first surface, a second surface, and input/output pads on said first surface;

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a plurality of first electrically conducting leads, wherein a part of each of said first electrically conducting leads extend under said second surface of said single integrated circuit element;

a plurality of second electrically conducting leads, wherein no part of said second electrically conducting leads extend under said second surface of said single integrated circuit element;

bonding material between said second surface of said single integrated circuit element and said parts of said first electrically conducting leads extending under said second surface of said single integrated circuit element, wherein said bonding material is a thermal conductor, an electrical non-conductor, and attaches said second surface of said single integrated circuit element to said parts of said first electrically conducting leads extending under said second surface of said single integrated circuit element; and

electrical connections formed between said input/output pads on said first surface of said single integrated circuit element and said first electrically conducting leads and between said input/output pads on said first surface of said single integrated circuit element and said second electrically conducting leads.

In addition to the admitted prior art found in appellants' specification, the examiner relies upon the following reference:

Ball                      5,689,135                      Nov. 18, 1997

Appellants' claimed invention is directed to an electronic circuit package comprising a single integrated circuit element (28) and a plurality of first and second electrically conducting

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leads. A part of the first electrically conducting leads extends under the integrated circuit element, whereas no part of the plurality of second electrically conducting leads extends under the integrated circuit element. A thermally conductive electrically non-conductive bonding material is used to bond the parts of the first electrically conducting leads which extend under the integrated circuit element to the element. According to appellants, "[t]he extended leads bonded to the back side of the chip provide a thermal conduction path to remove heat energy from the chip" (page 5, of brief, first paragraph).

Appealed claims 11-20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ball in view of the admitted prior art.

Appellants submit at page 8 of the brief that "[c]laims 11-20 . . . will be argued as a group and stand or fall together." Accordingly, all the claims stand or fall together with claim 11.

We have thoroughly reviewed each of appellants' arguments for patentability. However, we are in complete agreement with the examiner that the claimed subject matter would have been

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obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the examiner's rejections for essentially those reasons expressed in the answer.

Appellants do not dispute the examiner's factual determination that Ball discloses an electronic circuit package comprising an integrated circuit element having first and second surfaces, a plurality of first electrically conducting leads which extend under the second surface of the circuit element, a plurality of second electrically conducting leads which do not extend under the second surface of the circuit element, a bonding material between the second surface of the circuit element and the first conducting leads which extend under the second surface of the circuit element, wherein the bonding material is a thermal conductor and electrically non-conductive, and the claimed electrical connections between input/output pads on the first surface of the circuit element and the first and second electrically conducting leads. The principal arguments advanced by appellants is that Ball describes a circuit package comprising two integrated circuit elements or die, while the appealed claims

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define the circuit package having only "a single integrated circuit element". According to appellants "[t]he two circuit die package[s] described by Ball will have a different form factor, different mechanical properties, and different thermal properties than the single integrated element package of Claims 11-20" (page 10 of principal brief, first paragraph, last sentence.

Although Ball is directed to an electronic circuit package comprising two integrated circuit elements connected to the lead frame, we concur with the examiner that it would have been obvious for one of ordinary skill in the art to employ the lead frame of Ball in an electronic package comprising only one integrated circuit element. While Ball utilizes two circuit elements for increasing the density of the package, it has generally been held that it is a matter of obviousness for one of ordinary skill in the art to eliminate a feature of the prior art along with its attendant advantage. In re Kuhle, 526 F.2d 553, 555, 188 USPQ 7, 9 (CCPA 1975). Here, we are satisfied that one of ordinary skill in the art would have understood that the design of Ball's lead frame would also be suitable for an electronic package comprising a single integrated circuit

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element. The examiner's citation of the admitted prior art is only to establish that electronic packages comprising only a single circuit element were known in the art. Contrary to appellants' arguments, it is not necessary for a finding of obviousness that the features of Ball's electronic package be incorporated into the package of the admitted prior art.

Moreover, we find that Ball describes the claimed electronic package within the meaning of 35 U.S.C. § 102. By virtue of the "comprising" language, the appealed claims do not preclude a second integrated circuit element of the type disclosed by Ball. It is well settled that the term "comprising" opens the claim to components other than those specifically recited in the claim. In our view, a reasonable interpretation of claim 11 is an electronic circuit package including an additional, or second, single integrated circuit element. It is by now axiomatic that anticipation is the epitome of obviousness.

As a final point, we note that appellants base no arguments upon objective evidence of nonobviousness such as unexpected results.

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In conclusion, based on the foregoing, and the reasons well-stated by the examiner, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
BRADLEY R. GARRIS	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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	)	
CATHERINE TIMM	)	
Administrative Patent Judge	)	

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