

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DANIEL PHILLIP DAILEY, ROBERT EDWARD BELKE JR.,  
JAY DEAVIS BAKER, ACHYUTA ACHARI, MYRON LEMECHA  
and MICHAEL GEORGE TODD

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Appeal No. 2001-0249  
Application No. 08/786,494

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ON BRIEF

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Before HAIRSTON, KRASS, and FLEMING, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 17-35. Claims 1-16 have been withdrawn from consideration and form no part of the appeal herein.

The invention is directed to a multi-layer printed circuit

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board and a method of making the board. In particular, the invention includes a selection of low modulus material and a height of an interconnect region such that their combination provides reduced interfacial shear stresses in the printed circuit board.

Representative independent claim 17 is reproduced as follows:

17. A printed circuit board having at least two conductor layers and adapted for reduced interfacial shear stresses, comprising:

a laminate substrate having:

a top layer forming a first major surface and having a first conductor pattern formed thereon;

a bottom layer forming a second major surface opposed to the first major surface and having a second conductor pattern formed thereon; and

a middle layer selectively etched to isolate selected portions of the first and second surfaces and define interconnect regions therebetween having a predetermined height;

a compliant adhesive layer comprised of a low modulus material having a first major surface secured to a second major surface of the substrate, and a second major surface; and

a base having a first major surface secured to the second major surface of the adhesive layer;

wherein the low modulus material and the height of the interconnect regions are selected such that their combination provides said reduced interfacial shear stresses.

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The examiner relies on the following reference:

Livshits et al. [Livshits]      4,404,059      Sep. 13, 1983

Claim 35 stands rejected under 35 U.S.C. 112, first and second paragraphs, as relying on an inadequate written description and being indefinite, respectively.

Claims 17, 18, 21, 22, 25, 26 and 31-34 stand rejected under 35 U.S.C. 102(b) as anticipated by Livshits.

Claims 19, 20, 23, 24, 27-30 and 35 stand rejected under 35 U.S.C. 103 as unpatentable over Livshits.

Reference is made to the brief and answer for the respective positions of appellants and the examiner.

#### OPINION

At the outset, we will summarily sustain the rejection of claim 35 under both 35 U.S.C. 112, first paragraph, and under 35 U.S.C. 112, second paragraph, because appellants offer no response to the examiner's rejections on these grounds.

With regard to the rejections based on prior art, appellants

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argue only the rejection under 35 U.S.C. 102(b), contending that the recitation, in claim 17, of a printed circuit board "having at least two conductor layers and adapted for reduced interfacial shear stresses, ...wherein the low modulus material and the height of the interconnect regions are selected such that their combination provides said reduced interfacial shear stresses" and the recitation, in claim 33, of a printed circuit board, "having at least two conductor layers and adapted for reducing between the layers interfacial shear stresses to below a predetermined stress factor...wherein the modulus material of the base and the height of the interconnect regions are selected such that their combination provides the reduced interfacial shear stresses below the predetermined stress factor," distinguish over Livshits.

With regard to the rejection under 35 U.S.C. 103, appellants only state that the claims subject to this rejection depend from and include the limitations of claims 17 and 33 and that these claims are patentable for the same reasons as alleged for claims 17 and 33.

Accordingly, all the claims will stand or fall with independent claims 17 and 33. Thus, we only need to consider the rejection of these independent claims under 35 U.S.C. 102(b).

With regard to the rejection under 35 U.S.C. 102(b), it is

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the examiner's position that Livshits discloses the claimed subject matter but for the provision of reduced interfacial shear stresses. However, the examiner finds that this would be "inherently" provided by the circuit board of Livshits.

The instant claimed invention recites that the compliant adhesive layer comprises a "low modulus material" and that it is the combination of the selected low modulus material and the height of the interconnect regions (defined as being between a first major surface of a top layer of a laminate substrate and a second major surface of a bottom layer of the substrate and having a predetermined height) which provides for the claimed "reduced interfacial shear stresses."

There is nothing "inherent" about selecting the right combinations of two variables (low modulus material and height of interconnect regions) so as to result in reduced interfacial shear stresses in a multi-layer printed circuit board and we find nothing within the disclosure of Livshits that would have indicated the selection of such variables for such a purpose.

Accordingly, the examiner's reasoning falls far short of providing a prima facie showing of anticipation of the instant claimed subject matter and we will not sustain the rejection of claims 17, 18, 21, 22, 25, 26 and 31-34 under 35 U.S.C. 102(b).

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Moreover, we will not sustain the rejection of claims 19, 20, 23, 24, 27-30 and 35 under 35 U.S.C. 103.

Since we have sustained the rejection of claim 35 under 35 U.S.C. 112, first and second paragraphs, due to a lack of any argument by appellants, but we have not sustained the rejections of claims 17-35 based on prior art, the examiner's decision is affirmed-in-part.

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

AFFIRMED-IN-PART

KENNETH W. HAIRSTON	)
Administrative Patent Judge	)
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ERROL A. KRASS	) BOARD OF PATENT
Administrative Patent Judge	) APPEALS AND
	) INTERFERENCES
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MICHAEL R. FLEMING                    )  
Administrative Patent Judge        )

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