THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte STEFANO CLEMENTE

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Appeal No.1997-4038
Application 08/337,550[1]

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ON BRIEF

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Before FLEMING, GROSS and FRAHM, **Administrative Patent Judges**.

FLEMING, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 11, 12 and 19. Claims 1 through 10 and 13 through 18 have been allowed.

[1] Application for patent filed November 10, 1994.

The present invention is concerned with the accurate determination of temperature of a discrete power semiconductor device using an analog integrated circuit that is copackaged with the power semiconductor device on a heat sink.

Independent claim 11 is reproduced as follows:

11. A method for determining the steady state temperature of a discrete power semiconductor device using an analog integrated circuit that is co-packaged with the power semiconductor device on a heat sink, given knowledge of the thermal resistance between the power semiconductor device and the analog integrated circuit, the thermal resistance between the power semiconductor device and the heat sink and the thermal resistance between the analog integrated circuit and the heat sink, the method comprising:

determining the voltage across the power semiconductor device and the current through the power semiconductor device, thereby determining the power dissipated in the power semiconductor device;

determining the temperature of the analog integrated circuit;

determining the heat sink temperature; and

using said heat sink temperature, the power dissipated in the power semiconductor device, the temperature of the analog integrated circuit and the thermal resistances between the power semiconductor device and the analog integrated circuit, between the power semiconductor device and the heat sink, and between the analog integrated circuit and the heat sink to determine the temperature of the discrete power semiconductor device.

The Examiner relies on the following reference:

Young	4,001,649	Jan. 4, 1977

Claims 11, 12 and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Young.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the brief and answer for the respective details thereof.

OPINION

We will not sustain the rejection of claims 11, 12 and 19 under 35 U.S.C. § 103.

The Examiner has failed to set forth a ***prima facie*** case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importers Int'l, Inc***., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996), ***citing W.L. Gore & Assocs., Inc. v. Garlock, Inc***., 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984).

On pages 3 through 6 of the brief, Appellant argues that Young does not teach or suggest "determining the temperature of the analog integrated circuit" as recited in Appellant's claims. On pages 6 through 8 of the brief, Appellant argues that Young does not teach or suggest

"using said heat sink temperature, the power dissipated in the power semiconductor device, the temperature of the analog integrated circuit and the thermal resistances between the power semiconductor device and the analog integrated circuit, between the power semiconductor device and the heat sink, and between the analog integrated circuit and the heat sink to determine the temperature of the discrete power semiconductor device," as recited in Appellant's claims.

On page 4 of the answer, the Examiner acknowledges that Young does not disclose a copackaged power semiconductor and analog circuit, nor does Young explicitly state the thermal resistances needed to determine temperature. The Examiner seems to reason that if one of ordinary skill in the art were to copackage a power semiconductor and analog circuit that the method and apparatus as claimed by the Appellant would have been inherent.

"Inherency and obviousness are distinct concepts." ***W.L. Gore & Associates, Inc. v. Garlock, Inc.***, 721 F.2d 1540, 220 USPQ 303, 314 (Fed. Cir. 1983) ***citing In re Spormann***, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966). Furthermore, "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.'" ***In re Robertson***, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) ***citing Continental Can Co v. Monsanto Co.***, 948 F.3d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). "Inherency, however, may not be established by probabilities or possibilities. The mere

fact that a certain thing may result from a given set of circumstances is not sufficient." ***Id***. at 1269, 20 USPQ2d at 1749 (***quoting In re Oelrich***, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981).

Upon a close inspection of Young, we find that Young teaches determining the temperature of a semiconductor device junction shown as a diode 11 in figure 1. We further find that Young does not teach or even contemplate that the analog circuits shown in figure 1 would be copackaged with the semiconductor device, diode 11. Therefore, we fail to find that the Examiner established inherency because from the teachings of Young the missing descriptive matter is not necessarily present in theYoung temperature monitoring apparatus. Therefore, we find that Young does not inherently teach determining the temperature of the analog integrated circuit as recited in Appellant's claims, nor does Young inherently teach using the heat sink temperature, the power dissipated in the power semiconductor device, the temperature of the analog integrated circuit and the thermal resistances between the power semiconductor device and the analog integrated circuit, between the power semiconductor device and the heat sink, and between the analog integrated circuit and the heat sink to determine the temperature of the discrete power semiconductor device as recited in Appellant's claims.

We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration. Our reviewing court requires this evidence in order to establish a ***prima facie*** case. ***In re Piasecki,*** 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984); ***In re Knapp-***

Monarch Co., 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961); ***In re Cofer***, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966). Our reviewing court states in ***In re Piasecki***, 745 F.2d at 1472, 223 USPQ at 788, the following:

> The Supreme Court in ***Graham v. John Deere Co.***, 383 U.S. 1 (1966), focused on the procedural and evidentiary processes in reaching a conclusion under Section 103. As adapted to ex parte procedure, Graham is interpreted as continuing to place the "burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under section 102 and 103". ***Citing In re Warner***, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967).

Furthermore, the Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Upon our review of Young, we fail to find that Young suggests to those skilled in the art to provide the modification proposed by the Examiner. Young fails to contemplate the problem being solved by the Appellant which is determining the temperature of a discrete power semiconductor device using an analog integrated circuit that is copackaged with the power semiconductor device on a heat sink.

In view of the foregoing, we have not sustained the rejection of claims 11, 12 and 19 under 35 U.S.C. § 103. Accordingly, the Examiner's decision is reversed.

REVERSED

MICHAEL R. FLEMING	)
Administrative Patent Judge	)
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	)
	) BOARD OF PATENT
ANITA PELLMAN GROSS	)
Administrative Patent Judge	) APPEALS AND
	)
	) INTERFERENCES
	)
ERIC FRAHM	)
Administrative Patent Judge	)

MRF/dal

OSTROLENK, FABER, GERB
and SOFFEN
1180 AVENUE OF THE AMERICAS
NEW YORK, NY 10036-8403