

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAMORU SHINOHARA

Appeal No. 1998-1097
Application No. 08/557,484

HEARD: Oct. 10, 2000

Before BARRETT, RUGGIERO, and LALL, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 1-12, all of the claims pending in the present application.

Appeal No. 1998-1097
Application No. 08/557,484

The claimed invention relates to a circuit arrangement for reducing noise and eliminating cross-talk in a semiconductor integrated circuit which includes a MIS (metal-insulator silicon) capacitor. First and second capacitors are connected in series between a substrate terminal and the MIS capacitor, with a power supply connected between the first and second capacitors. The power supply acts to control the potential between the first and second capacitors to prevent a digital signal transmitted to the substrate from entering a separate circuit connected with the MIS capacitor.

Claim 1 is illustrative of the invention and reads as follows:

1. A semiconductor circuit comprising:
 - a substrate terminal;
 - a first capacitor connected to said substrate terminal;
 - a second capacitor connected in series to said first capacitor;
 - an MIS capacitor connected in series to said second capacitor;
 - a connector terminal connected between said first capacitor and said second capacitor; and
 - a reference potential-generating source for controlling said connector terminal to an arbitrary potential connected to the connector terminal.

Appeal No. 1998-1097
Application No. 08/557,484

The Examiner relies on the following prior art:

Senuma et al. (Senuma)	5,124,761	
Jun. 23, 1992		
Miwa et al. (Miwa)	5,414,291	May 09,
1995		
		(Filed Jan. 31, 1994)
Ito (Published Japanese	4-196583	Jul. 16,
1992		
Kokai Patent Application) ¹		

Claims 1, 2, 4, 7, and 8 stand finally rejected under 35 U.S.C. § 102(b) as being anticipated by Senuma. In a separate rejection, claims 2-8 stand finally rejected under 35 U.S.C.

§ 102(e) as being anticipated by Miwa. Lastly, claims 9-12 stand finally rejected under 35 U.S.C. § 102(b) as being anticipated by Ito.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Brief and Answer for the respective details.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the Examiner and the

¹A copy of the translation provided by the U.S. Patent & Trademark Office, September 1997, is included and relied upon for this decision.

Appeal No. 1998-1097
Application No. 08/557,484

evidence of anticipation 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 Brief along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer. Only those arguments actually made by Appellant in the Brief 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 § 1.192(a)].

It is our view, after consideration of the record before us, that the disclosure of Senuma fully meets the invention as recited in claim 1, but does not meet the invention as set forth in claims 2, 4, 7, and 8. We are also of the view that Miwa does not fully meet the invention as recited in claims 2-8. Lastly, it is our opinion that Ito fully meets the invention as recited in claims 9 and 10, but does not meet the invention as set forth in claims 11 and 12. Accordingly, we affirm-in-part.

We first consider the rejection of claims 1, 2, 4, 7, and 8 under 35 U.S.C. § 102(b) as being anticipated by Senuma.

Appeal No. 1998-1097
Application No. 08/557,484

Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to independent claim 1, the Examiner has indicated (Answer, page 4) how the various limitations are read on the disclosure of Senuma, making particular reference to Senuma's illustrations in Figures 5 and 6. In response, Appellant's arguments primarily center on the Examiner's alleged mischaracterization of Senuma's capacitances C_{j1} and C_{j2} as corresponding to Appellant's claimed first and second capacitors. Appellant contends (Brief, page 4), referring to Senuma, that "...a review of the specification and the drawings confirms that items C_{j1} and C_{j2} are merely the

Appeal No. 1998-1097
Application No. 08/557,484

intrinsic capacitance present in the device and are not separate, distinct capacitor elements as claimed."

After careful review of Appellant's arguments, it is our opinion that such arguments are not commensurate with the scope of claim 1. It is axiomatic that, in proceedings before the PTO, claims in an application are to be given their broadest reasonable interpretation consistent with the specification, and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art. In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983). Moreover, limitations are not to be read into the claims from the specification. In re Van Geuns, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993) citing In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). In our view, even assuming, arguendo, that "separate and distinct" language would distinguish over the parasitic junction capacitances C_{j1} and C_{j2} in Senuma, no such language exists in the claims. We further note that the capacitances 2 and 3 illustrated in Appellant's Figure 1, which correspond to the claimed first and second capacitors in appealed claim 1, are described at page 13,

Appeal No. 1998-1097
Application No. 08/557,484

lines 16-20 of Appellant's specification as parasitic junction capacitances. In view of the above, since all of the limitations of independent claim 1 are disclosed by Senuma, the Examiner's

35 U.S.C. § 102(b) rejection of claim 1 is sustained.

Turning to a consideration of the Examiner's 35 U.S.C. § 102(b) rejection of independent claim 2 based on Senuma, we note that, while we found Appellant's arguments to be unpersuasive with respect to appealed claim 1, we reach the opposite conclusion with respect to claim 2. Appellant's argument (Brief, page 4), with which we agree, is that, contrary to the express claim language, Senuma's bottom electrode, identified as element 34 by the Examiner, is not "formed over" Senuma's second layer 35. While we do not dispute the Examiner's contention that the term "over" is subject to possible varying interpretations when considering the structural orientation of an applied reference, we can conceive of no orientation of the disclosed structure of Senuma, and the Examiner has pointed to none, which would meet all of the limitations of appealed claim 2. Accordingly, we do not sustain the Examiner's 35 U.S.C.

Appeal No. 1998-1097
Application No. 08/557,484

§ 102(b) rejection of independent claim 2, nor of rejected claims 4, 7, and 8 dependent thereon, based on Senuma.

Our next consideration is the Examiner's 35 U.S.C. § 102(e) rejection of claims 2-8 based on Miwa. With respect to independent claim 2, the Examiner has attempted (Answer, page 4) to read the various limitations on Miwa, making particular reference to the illustration in Figure 12 of Miwa.

Appellant's primary argument in response asserts that element 199 in Miwa, identified by the Examiner as corresponding to the claimed "potential control electrode," is not in fact electrically connected with the first layer to control the first layer to be at an arbitrary potential as claimed.

After careful review of the Miwa reference in light of the arguments of record, we are in agreement with Appellant's position as stated in the Brief. While we do not dispute the Examiner's contention that Miwa's NPN transistor T_r would require connection to a source of potential for proper operation, such a generalized statement does not address the particulars of the language of appealed claim 2. A review of the semiconductor structure illustrated in Figure 12 of Miwa

Appeal No. 1998-1097
Application No. 08/557,484

reveals a clear demarcation between the NPN transistor and the MISC capacitor. Absent any illuminating disclosure in Miwa, which the Examiner has not pointed to, we fail to see any support for the Examiner's conclusion that connection of Miwa's NPN transistor to a potential source would control a first layer associated with the MISC capacitor to an arbitrary potential as required by the language of appealed claim 2. Therefore, since all of the limitations are not disclosed by Miwa, the Examiner's 35 U.S.C.

§ 102(b) rejection of independent claim 2, as well as claims 3-8 dependent thereon, is not sustained.

Lastly, we turn to a consideration of the Examiner's 35 U.S.C. § 102(b) rejection of claims 9-12 based on Ito.² With respect to independent claim 9, the Examiner has indicated (Answer, page 5) how the various limitations are read on the disclosure of Ito, in particular the illustration in Ito's Figure 4. In response, Appellant's sole argument in the Brief asserts the lack of disclosure in Ito of a doped

²The recitations of "the first dielectric film" at lines 6 and 7 of claims 9 and 11, respectively, lack clear antecedent reference since earlier recitations in claims 9 and 11 set forth "a first dielectric layer."

Appeal No. 1998-1097
Application No. 08/557,484

region in an epitaxial layer connected to a third opening. We do not agree. As pointed out by the Examiner (Answer, pages 5 and 8), the right-most opening in Ito's Figure 4 extends through the second and third dielectrics (12 and 15, respectively) to the doped region N⁺(P⁺) in epitaxial layer 19 formed in substrate 18.

With respect to dependent claim 10, we also agree with the Examiner that the generated input voltages V_1 and V_2 (discussed at page 4 of the English translation of Ito) in connection with the adder circuit illustrated in Figure 5 clearly suggest an inherent connection to a power supply. Accordingly, since all of the claimed limitations are disclosed by Ito, the Examiner's 35 U.S.C. § 102(b) rejection of claims 9 and 10 is sustained.

After considering the entirety of the Appellant's comments with respect to Ito, however, we find Appellant's arguments to be persuasive with respect to independent claim 11. We note that the limitations of claim 11 read on Appellant's Figure 4 embodiment in which a second doped region (identified as element 14 in Appellant's Figure 4) is formed in a first doped region (element 34 which is silicon doped

Appeal No. 1998-1097
Application No. 08/557,484

with an n-type material), with the first doped region formed in an SiO₂ layer (32) which in turn is formed on a silicon substrate (31). Like Appellants, we do not find such a configuration in Ito. While it appears from the illustration in Figure 4 that, as asserted by the Examiner, Ito shows two doped regions 18 and 19, we find no disclosure in Ito of the formation of the first doped layer in the SiO₂ layer as required by claim 11. Therefore, since all of the claimed limitations are not disclosed by Ito, the Examiner's 35 U.S.C. § 102(b) rejection of claims 11 and 12 is not sustained.

In summary, with respect to the Examiner's 35 U.S.C. § 102(b) rejection based on Senuma, we have sustained the rejection of claim 1, but have not sustained the rejection of claims 2, 4, 7, and 8. We have not sustained the Examiner's 35 U.S.C. § 102(e) rejection of claims 2-8 based on Miwa. Lastly, with respect to the Examiner's 35 U.S.C. § 102(b) rejection based on Ito, we have sustained the rejection of claims 9 and 10, but have not sustained the rejection of claims 11 and 12. Therefore, the Examiner's decision rejecting claims 1-12 is affirmed-in-part.

Appeal No. 1998-1097
Application No. 08/557,484

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

	Lee E. Barrett)	
	Administrative Patent Judge)	
)	
)	
	Joseph F. Ruggiero)	BOARD OF
PATENT	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
	Parshotam S. Lall)	
	Administrative Patent Judge)	

JFR:tdl

Appeal No. 1998-1097
Application No. 08/557,484

HILL, STEADMAN & SIMPSON
85th Floor Sears Tower
Chicago, IL 60606