

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.,

Petitioner,

v.

GODO KAISHA IP BRIDGE 1,

Patent Owner.

---

IPR2017-01843<sup>a</sup>  
Patent 7,893,501 B2

---

Record of Oral Hearing  
Held: September 6, 2018

---

Before JUSTIN T. ARBES, JENNIFER MEYER CHAGNON, and  
MELISSA A. HAAPALA, *Administrative Patent Judges*.

---

<sup>a</sup> Case IPR2017-01844 has been consolidated with this proceeding.

IPR2017-01843  
Patent 7,893,501 B2

APPEARANCES:

ON BEHALF OF THE PETITIONER:

DAVID CAVANAUGH, ESQUIRE  
Wilmer Cutler Pickering & Hale  
1875 Pennsylvania Avenue, N.W.  
Washington, DC 20006

ON BEHALF OF THE PATENT OWNER:

GERALD HRYCYSZYN, ESQUIRE  
Wolf Greenfield  
600 Atlantic Avenue  
Suite 2300  
Boston, MA 02210

The above-entitled matter came on for hearing on Thursday, September 6, 2018, commencing at 3:15 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Julie Souza, Notary Public.

P R O C E E D I N G S

1 - - - - -

2 JUDGE CHAGNON: Welcome back everybody. We're here today  
3 for our second hearing of the day in IPR2017-01843 related to U.S. patent  
4 7,893,501. I'm not going to go over all the ground rules again, but I'll just  
5 have both counsel introduce yourselves for the record at the microphone and  
6 see if anybody has any questions before we get started.

7 MR. CAVANAUGH: David Cavanaugh for TSMC with Wilmer  
8 Hale.

9 JUDGE CHAGNON: Thank you.

10 MR. HRYCYSZYN: Good afternoon, Your Honors. Gerry  
11 Hrycyszyn with Wolf Greenfield for Patent Owner IP Bridge.

12 JUDGE CHAGNON: Thank you so much, and as I said we're going  
13 to follow the same format of the previous hearing so whenever you're ready  
14 you can get started. How much time did you want to reserve today?

15 MR. CAVANAUGH: Fifteen minutes for rebuttal.

16 JUDGE CHAGNON: Fifteen minutes.

17 MR. CAVANAUGH: And just one preliminary question. Will this  
18 be a single consolidated transcript or two individual transcripts between the  
19 proceedings, or is that determined?

20 JUDGE CHAGNON: Because we did them as separate hearings,  
21 we'll do them as separate transcripts.

22 MR. CAVANAUGH: Okay. Good afternoon, Your Honors. I'll kind  
23 of dispense with some of the preliminaries with regard to the agenda for this  
24 presentation but I do want to present a little bit about the relevant

1 technology. I'll go through the relevant part of the 501 patent that is  
2 apparently disputed in this proceeding, an overview of the prior art that's  
3 used in this proceeding as well as some undisputed issues, and address  
4 finally the issues raised by the Patent Owner.

5 The technological background is the same and so I'm not going to  
6 spend any time with it other than noting that the various components of a  
7 MISFET transistor are described in Plummer and that's what we presented in  
8 the petition.

9 Going to slide 6. I think that the figure 1 of the 501 patent now is  
10 familiar territory. Important to this proceeding is the identification of where  
11 the gate is with respect to the silicon nitride film and that's the last element  
12 but it would be the silicon nitride film is in blue and the gate electrode is in  
13 orange.

14 Next slide. Again, and maybe we can go back to figure 1 for a  
15 moment. I do also want to identify that the sidewalls 7, we've identified in  
16 color the limitations of the claim but the sidewalls 7 aren't really a part of the  
17 limitations of claim 1 and we haven't highlighted those but they're on either  
18 side of the gate electrode.

19 Next slide. And so here's the claim 1 that's being challenged by this  
20 petition and we have the last limitation, actually I'll start with the third to last  
21 limitation that introduces a silicon nitride film and then the silicon nitride  
22 film is not formed on the upper surface of the gate electrode which is the  
23 second to last limitation, and then the last limitation which was added during  
24 prosecution the gate electrode protrudes upward from a surface level of parts

1 of the silicon nitride film located at both side surfaces of the gate electrode.  
2 So that's the limitation that we'll be discussing today.

3 The prior art in this petition is Misra and Misra I've identified in slide  
4 10 with figure 7 and I've identified how the various limitations, the  
5 disclosure of 501 corresponds to the figure 7 of Misra, and so there's an  
6 active region -- Patent Owner doesn't dispute in this case whether there's an  
7 active region in Misra -- a gate insulating film in red. There is a gate  
8 electrode 28b and source and drain regions which are in green and that's in  
9 26 and 28, and important for the last limitation of the claim the gate  
10 electrode 28b extends above the silicon nitride film 20.

11 I'd like to just describe what I understand to be undisputed issues and  
12 we'll hear from the Patent Owner if they disagree, as they disagree if I'm  
13 incorrect. But I think there is no dispute that the Misra gate 28b protrudes  
14 above the surface of the layer 20 of the film 20 and that's just like what's in  
15 figure 1 of the 501 patent which the Patent Owner has alleged in prosecution  
16 corresponds to the added limitation. So that I don't think is in dispute.

17 Next slide. Again, I had mentioned it briefly when I was introducing  
18 Misra, but there is no dispute that Misra discloses the limitation of the  
19 claimed active region in whatever iteration that the Patent Owner would  
20 present it.

21 Next slide. There's no dispute that the protruding gate was known in  
22 the art and in fact in the Patent Owner preliminary response indicated that  
23 Igarashi teaches explicitly the protruding gate limitation, and we do think  
24 that that's relevant to considering this is not a new feature that has never

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.