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Paper No. ___

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD,
Petitioner,

v.

GODO KAISHA IP BRIDGE 1,
Patent Owner.

IPR2017-01841¹
Patent 7,893,501

**PATENT OWNER'S SUR-REPLY
PURSUANT TO JULY 20, 2018 ORDER (PAPER NO. 26)**

¹ Case IPR2017-01842 has been consolidated with this proceeding.

APPENDIX LISTING OF EXHIBITS

| Exhibit | Description |
|----------------|--|
| 2001 | Declaration of Joshua J. Miller in Support of Motion for Admission <i>Pro Hac Vice</i> |
| 2002 | Exhibit 2002 to the Deposition of Stanley R. Shanfield |
| 2003 | Exhibit 2003 to the Deposition of Stanley R. Shanfield |
| 2004 | Exhibit 2004 to the Deposition of Stanley R. Shanfield |
| 2005 | Exhibit 2005 to the Deposition of Stanley R. Shanfield |
| 2006 | Exhibit 2006 to the Deposition of Stanley R. Shanfield |
| 2007 | Declaration of Alexander D. Glew, Ph.D., P.E. |
| 2008 | Curriculum vitae of Alexander D. Glew, Ph.D., P.E. |
| 2009 | Transcript of the Deposition of Stanley R. Shanfield, Ph.D. (March 27, 2018) |
| 2010 | Transcript of the Deposition of Stanley R. Shanfield, Ph.D. (March 28, 2018) |
| 2011 | Excerpts from Webster's Third New International Dictionary (2002) |
| 2012 | Excerpts from Collins English Dictionary (2000) |
| 2013 | Excerpts from Chambers 21st Century Dictionary (2000) |
| 2014 | U.S. Patent No. 4,578,128 to Mundt et al. ("Mundt") |
| 2015 | Request for Continued Examination dated March 29, 2010, in U.S. Patent Application Serial No. 12/170,191 |
| 2016 | U.S. Patent No. 6,437,404 ("Xiang") |
| 2017 | U.S. Patent No. 6,870,230 ("Matsuda") |
| 2018 | Office Action dated May 10, 2010, in U.S. Patent Application Serial No. 12/170,191 |
| 2019 | U.S. Patent No. 3,390,022 ("Fa") |
| 2020 | Excerpts from McGraw-Hill Dictionary of Scientific and Technical Terms (2003) |
| 2021 | Deposition Exhibit 2001 from the Deposition of Stanley R. Shanfield |
| 2022 | Transcript of July 19, 2018 Conference Call |
| 2023 | Reserved |
| 2024 | Sur-reply Declaration of Alexander D. Glew |

Petitioner cites new Exhibits 1025 (“Agata”) and 1026 (“Rashed”) to “support” its improper new argument that claim 1’s requirement that “the MISFET includes: an active region” is met by modified Igarashi Fig. 12 because the region allegedly bounded by isolation purportedly is a *single* active region that includes multiple transistors. Reply, 12 (“an active region can include more than one transistor.”). Petitioner’s improper new argument fails for multiple reasons.

First, as Dr. Glew explains, Agata and Rashed each discloses a multi-transistor device and explicitly describes that larger “device” (not a transistor thereof) as “including” an active region bounded by isolation. Ex. 2024, ¶¶3-5; Agata at 5:9-18 (“*sense amplifier includes* ... [the] active region 2.”); Rashed at 2:55-56 (“*device* includes a continuous active region.”). Neither Agata nor Rashed refers to a MISFET (or other transistor) in the multi-transistor device as “includ[ing]: an active region” as required by claim 1. *Id.*, ¶¶2-3. Thus, neither Agata, Rashed, nor any other evidence of record refutes Dr. Glew’s testimony, which is supported by the ’501 patent and extensive extrinsic evidence, that a MISFET that “includes an active region” as claimed requires that the active region be dedicated to that MISFET. *Id.*, ¶¶6-7, 11; Ex. 2007 ¶¶ 67-75 (citing ’501 patent extensively); Ex. 2007 ¶¶78-85 (citing Woerlee, Kang, Rabaey and Plummer).

Second, Petitioner’s argument that “an active region can include more than one transistor” (Reply, 12) seeks to rewrite claim 1. Claim 1 does *not* recite the

active region as the larger whole that “includes” a transistor. *It recites just the opposite* – the “MISFET includes an active region.” Having no answer for the argument and evidence in the POR that the claim language which recites that the “*MISFET includes* an active region” is what requires one-to-one correspondence between a MISFET and the active region it “includes” (POR at 67-74), the Petitioner ignores it entirely. Indeed, Petitioner offers *nothing* to rebut the evidence cited by Dr. Glew (Ex. 2007, ¶¶142-47) corroborating his testimony that the plain and ordinary meaning of “includes” “reference[s] a larger whole that ‘contain[s]’ a smaller component whereby the claim requires that ‘the MISFET [] is the larger whole that ‘includes’ the entirety of the active region and not the other way around.’” *Id.*, ¶142.² A simple analogy reveals that Dr. Glew’s testimony is manifestly correct, as the continental United States (“US”) “includes” Virginia, but Virginia does not “include” the continental US because the continental US is the larger whole that encompasses areas (other states) that are not part of Virginia.

Petitioner’s argument that “an active region can include more than one transistor” (Reply, 12) is misleading and irrelevant. *Id.*, ¶6. That the active region *of a multi-transistor device* in Agata and Rashed has multiple transistors does not support an assertion that any of those *transistors “includes” the device’s* active

² Reply at 20-21 mischaracterizes Dr. Glew’s deposition testimony. Ex. 2024, ¶10.

region. *Id.*, ¶¶6-7. Agata and Rashed say no such thing. To the contrary, they explicitly state that it is the larger “device,” to which the active region is dedicated, that “includes” the active region. *Id.*, ¶¶3-5. Agata and Rashed *corroborate* Dr. Glew’s testimony that a structure (whether a multi-transistor device in Agata and Rashed or a MISFET in the ’501 patent) “includes” an active region only if the active region is dedicated to the structure that “includes” it. *Id.* ¶¶ 7-8. No evidence supports an assertion that any transistor in modified Igarashi Fig. 12 “includes” an active region encompassing other transistors. *Id.*, ¶¶6-7.

Third, Petitioner’s assertion that “all functional MOSFET transistors have an active region” is wrong—an active region must be bounded by isolation and a transistor can be formed without isolation. *Id.* ¶ 9; POR at VI.A, VII.C.1.b. While a transistor must be formed in a region, the ’501 patent is clear that that is a “formation region,” and only if isolation is provided does the formation region include a smaller active region. Ex. 2024 ¶9; Ex. 1001 at 3:20-28, Fig. 1.

Fourth, Petitioner’s assertions that interpreting “active region” to encompass multiple transistors is not “prohibited” or “precluded” (Reply at 6, 10, 12) not only ignore the claimed requirement that the “*MISFET includes* an active region,” they also violate the black letter law cited in the POR at 26.

Dated: July 27, 2018

Respectfully submitted,
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