

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY GROUP CORPORATION,
Petitioner

v.

VISIONX TECHNOLOGIES, LLC,
Patent Owner

IPR2023-00389
U.S. Patent No. 8,035,143

**PATENT OWNER'S SUR-REPLY TO
PETITIONER'S REPLY TO PATENT OWNER'S
PRELIMINARY RESPONSE**

This filing was authorized by the Board in a conference call
on May 24, 2023 (transcript at Exhibit 1027)

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I. “Connection Via Metal”

The ’143 patent explicitly states that the “readout circuit may include a plurality of transistors 110.” ’143 patent, 3:17-18. And the “connection via metal electrically connects the transistors 110 with a metal pad.” *Id.*, 3:53-55.

This is consistently shown in *all* of the patent’s relevant drawings, in which “connection via metal” 125 electrically connects the readout circuitry transistor 110 to metal pad 180 (Figs. 8-9) or metal pad 230 (Figs. 12-13). This is also reflected in the surrounding claim language of claim 1, which recites: (1) “a semiconductor substrate formed on a first surface thereof with a readout circuitry”; (2) “a connection via metal extending from the first surface to a second surface”; (3) “the connection via metal having a projection part projecting from the second surface”; and (4) “the metal pad covers the projection part”.

The claim language, taken together with the specification’s definition and the drawings, reflect that the term “connection via metal” is understood to electrically connect the readout circuitry of the first surface with the metal pad covering the projection part—i.e., “a via metal that electrically connects the readout circuitry” to the metal pad.

In contrast, Petitioner’s definition—“metal in a via that spans multiple layers”—has no support in the ’143 patent. The patent never defines or describes a “connection via metal” in that manner, and the patent never seeks to draw a

contrasting definition of “via” as only “resid[ing] within a single layer.”

Petitioner’s definition also inappropriately injects “insulating layer 120” into the claim, even though that element is not recited. Instead, “insulating layer” in claim 1 refers to the “insulating layer *formed on the second surface* of the semiconductor substrate to expose the projection part,” which is not even shown in Figure 2 (Reply at 2). Finally, Petitioner’s reliance on withdrawn claim 11 does not fix the problems with Petitioner’s construction. Petitioner offers no explanation for why the withdrawal of a separate claim with different elements is relevant; and the prosecution history, in stark contrast, shows that the withdrawal was simply made pursuant to a restriction requirement. Ex. 1002 at 130.

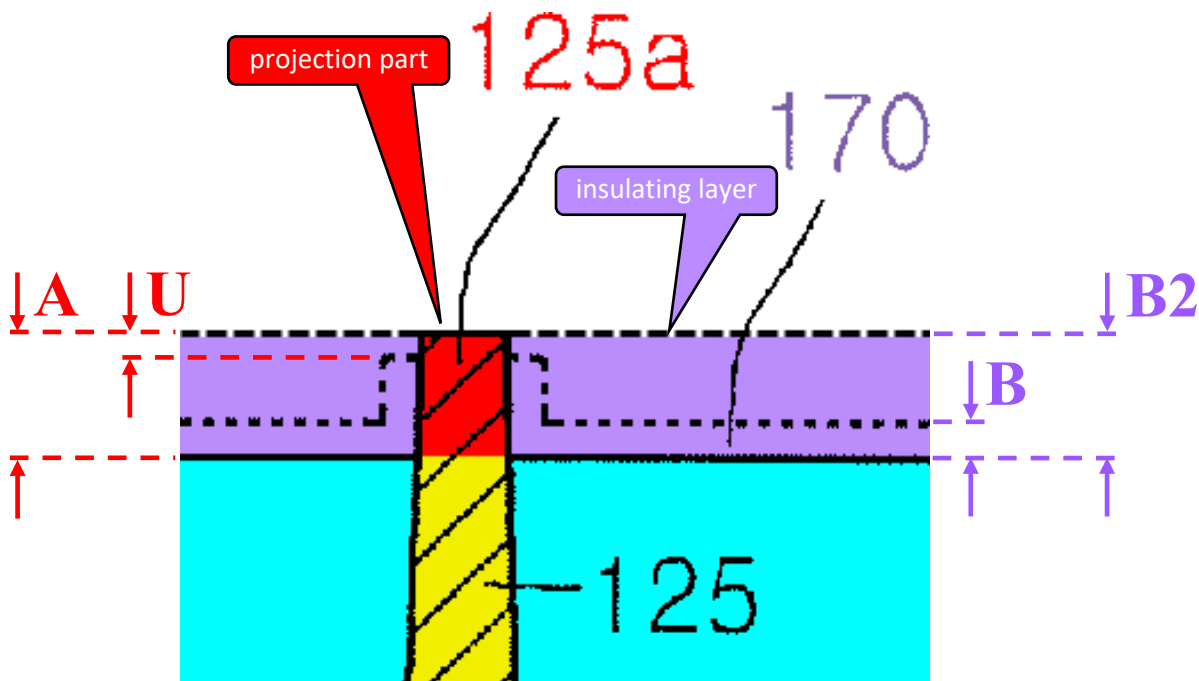
II. “Surrounding a Portion of a Lateral Side of the Projection Part”

The claim language, specification, and the ordinary meaning all require the insulating layer to partially but not entirely cover the lateral side of the projection part. Reference is made to the following two claim clauses:

[1D] – “an insulating layer formed on the second surface of the semiconductor substrate <i>to expose</i> the projection part <i>while surrounding a portion of a lateral side of the projection part</i> ; and”
[1F] – “wherein <i>the insulating layer has a thickness thinner than a projection height of the projection part</i> .”

The term “*to expose*” is consistently used in the written description and drawings to describe and illustrate that the lateral sides are partially but not entirely covered by the insulating layer. See, e.g., ‘143 patent, 4:53-56, Fig. 4 (“*to expose*

the connection via metal 125”); *id.*, 5:22-26, Fig. 7 (“**to expose** the projection part”); *id.*, 5:47-49, Fig. 9 (“to open (**expose**) the metal pad 180”); *id.*, 6:20-22, Fig. 11 (“**to expose** the projection part 125a”). Moreover, contrary to Petitioner’s argument, all embodiments illustrate that the lateral side of projection part 125a is partially but not entirely covered by the insulating layer. *Id.*, Figs. 7-9 and 11-13. In addition, claim clause [1F] complements and reinforces the meaning of “surrounding a portion of a lateral side,” since if the insulating layer was thicker than a projection height of the projection part, the insulating layer would necessarily cover the entire lateral side of the projection part:



In the above illustration of a modified and annotated Fig. 8, insulating layer 170 has a thickness (B) that is **thinner than** projection height (A) of the projection part. If insulating layer 170 had a thickness (B2) that was not thinner than

projection height (A), the insulating layer would be precluded from covering only a portion of a lateral side, and would have to cover the entirety of the lateral side of projection part 125a. As such, [1F] reinforces and complements [1D] so that the insulating layer covers a portion but not all of the lateral side of the projection part.

Furthermore, according to Petitioner's interpretation, the term "a portion of" is rendered superfluous and meaningless since the phrase "surrounding a lateral side" by itself (and without being qualified by "a portion of") can mean the lateral side is at least partially surrounded. "It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous." *Intel Corp.*, at 810 (Fed. Cir. 2021). As one of the identified advantages of the invention, the patent explicitly recognizes that the "projection part 125a inhibits the connection failure of the metal pad ... and the connection via metal 125. In other words, the projection part 125a firmly maintains the electric connection of the metal pad and the connection via metal 125." *Id.*, 4:61-65; *see also* POPR, 18-21. As a result, not only is Petitioner's construction inconsistent with the claim language and the specification, but it also seeks to erode an explicit advantage of the patent.

Petitioner's focus on the "comprising" language in the preamble is misplaced. "Although the transitional term 'comprising' indicates that the claim is open-ended, ***the term does not render each limitation or phrase within the claim open-ended.***" *In re Varma*, at 1362 (Fed. Cir. 2016). *See also David Netzer*, at

998 (Fed. Cir. 2016) (same); *Dippin' Dots*, at 1343 (Fed. Cir. 2007) (same). In *Crystal Semiconductor* (at 1348-1349), the Court relied on the “**intent**” and “**purpose**” of the invention as described in the written description and drawings. Reliance on *Hewlett-Packard* and *Kom Software* as standing for a rigid rule for interpreting “a portion of” regardless of the patent and the claim at issue is similarly misplaced. *See generally Phillips*, 415 F.3d 1303 (Fed. Cir. 2005).

Courts have regularly interpreted terms such as “portion,” “partially,” or “part” to mean less than entire. *See, e.g., Helmsderfer*, at 1382 (Fed. Cir. 2008) (“we decline to construe the term ‘**partially** hidden from view’ to have the same meaning as ... ‘at least partially hidden from view.’”); *Rembrandt Techs.*, at 756 (E.D. Tex. 2007) (“The intrinsic evidence does not support a construction which departs from the **ordinary meaning of ‘portion.’** ... Accordingly, the court construes the term to mean ‘the part, but less than all, of the data transfer capacity.’”); *Mobile Telcoms.*, at *18 (E.D. Tex. 2014) (“‘**a portion of** a message’ is something less than an entire message.”); *Prism Techs. LLC*, at 191 (D. Del. 2007) (the court construed “**part of** said identity data” to mean “some, but not all, of the identity data”); *SeaChange Int’l.*, at 405 (D. Del. 2004) (“A ‘**portion**’ is less than a whole.”); and *IDEC Pharms.*, at *68 (S.D. Cal. 2003) (“the phrase antibody ‘**portion**’ excludes a whole antibody.”).

Respectfully submitted, Patent Owner VisionX
Date: June 14, 2023 /michael farjami/ Michael Farjami, Reg. No. 38,135

CERTIFICATE OF SERVICE

I hereby certify that on June 14, 2023 copies of the foregoing Sur-Reply and all documents filed with it were served via electronic mail, as agreed to by counsel, upon the following counsel for the Petitioner:

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