

**Keywords:** Claim construction, ordinary and customary meaning, laches, estoppel, derivation, request for new trial judge on remand

**Summary:** In *International Rectifier*, the Federal Circuit held that claim terms must be construed in accordance with the ordinary and customary meaning assigned to them by those skilled in the art unless the specification either 1) sets forth a different meaning or 2) uses words that manifest a “clear disavowal of claim scope.” The Court vacated the District Court’s summary judgment of infringement and remanded the case back to the District Court for consideration consistent with the Federal Circuit’s claim interpretation.

*International Rectifier Corp. v. IXYS Corp.*  
70 U.S.P.Q.2d 1209 (Fed. Cir. 2004)  
Decided March 18, 2004

## **I. Facts**

International Rectifier (“IR”) asserted that IXYS infringed U.S. Patent Numbers 4,959,699, 5,800,725, and 5,130,767 (hereafter referred to as the ‘699, ‘725, and ‘767 patents or collectively as the VPPM patents). The VPPM patents all relate to vertical planar power metal-oxide-semiconductors (“VPPM”) transistors, which can be used to switch electrical voltages on or off at high speeds. The transistors at issue in the VPPM patents are manufactured, in part, by introducing impurities through a window in a photomask then heating the impurities to cause them to diffuse into a silicon wafer. The eventual shape of each region of the resulting transistor is determined by the shape of the window in the photomask, the concentration of impurities, and the temperature and duration of heating.

Claims 1 and 19 of the ‘699 patent are representative of the claims at issue in the case. Claim 1 recites a “first base region being a cellular *polygonal* region,” and a source region “having the shape of an *annular* ring.” (Emphasis added). Claim 19 recites “a further region of opposite connectivity type *adjoining* said lightly doped major body portion.” (Emphasis added).

Several times between 1987 and 1996, IR accused IXYS of infringing its patents and requested that IXYS pay a royalty. On each occasion, IXYS refused IR’s request and asserted that its technology was fundamentally different from that disclosed in IR’s patents. After a string of successful suits against other competitors, IR sued IXYS for infringement of the VPPM patents in the Central District of California in June of 2000. IXYS denied infringement and asserted the equitable defenses of laches and estoppel based on the prolonged history of licensing negotiations between the two companies. IXYS also asserted the defenses of derivation and inequitable conduct based on a similar, yet undisclosed, VPPM device that had been constructed by others in the patentee’s graduate school lab (the Plummer/Wood device).

After conducting a *Markman* hearing, the District Court issued a series of partial summary judgment orders that dismissed all of IXYS’s affirmative defenses and found IXYS liable for infringement. In addition, the District Court entered a permanent injunction against IXYS. IXYS appealed to the Federal Circuit and filed a request with the Federal Circuit to have the case reassigned to another trial court judge on remand. The Court granted IXYS’s emergency motion to stay the injunction pending appeal.

**II. Issues**

1. Did the District Court properly construe the meanings of the claim terms “polygonal,” “annular,” and “adjoining”?
2. Was the District Court’s summary judgment of infringement proper?
3. Was it proper for the District Court to dismiss IXYS’s affirmative defenses of laches and estoppel?
4. Was it proper for the District Court to dismiss IXYS’s affirmative defenses of derivation and inequitable conduct?
5. Should the case be remanded to a new trial court judge?

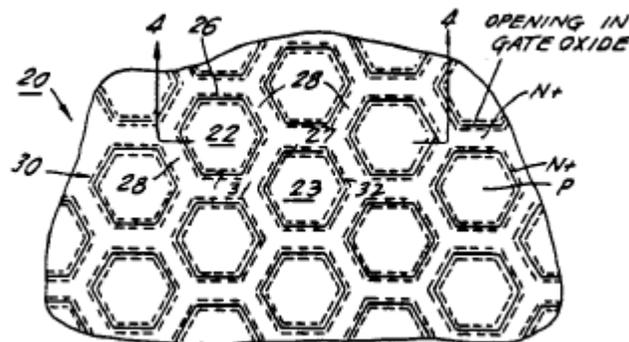
**III. Discussion**

1. No. The Federal Circuit (hereafter referred to as “the Court”) began by laying out the proper procedure for claim construction. The Court noted that claim construction always begins with the words of the claim, which must be given the “ordinary and customary meanings attributed to them by those of ordinary skill in the art.” The Court stated that it may rely on the claims themselves, dictionaries, treatises, the written description, drawings, and the prosecution history to determine this ordinary and customary meaning. Once the ordinary and customary meaning of the claim terms has been determined, the written description is consulted to determine if the specification rebuts the presumption of ordinary and customary meaning. Rebuttal of the presumption may be shown if the specification sets forth a definition for the claim term different from the ordinary and customary meaning or if words or expressions are used in a way that manifests “a clear disavowal of claim scope.”

A. “Polygonal”

The word “polygonal” is used to describe a base region in 44 of the 48 claims that were asserted against IXYS. The District Court construed this limitation to mean that the base region “be generally but not perfectly polygonal – *i.e.*, the surface expression of the base will be a closed figure with generally (not necessarily perfectly) straight sides.”

Both IR and IXYS agreed that the ordinary and customary meaning of the term polygon is “a closed plain figure bounded by *straight lines*.” (Emphasis added). IR asserted (and the District Court agreed) that those skilled in the art, however, would understand “polygonal” to encompass shapes with curved corners, because those skilled in the art would appreciate the diffusion will naturally cause some blurring of the corners and sides of the polygonal regions.



The Court rejected this argument. They concluded that even though those skilled in the art would appreciate that diffusion can cause some blurring, this knowledge does not change the ordinary and customary meaning of the term “polygonal.” The Court reminded the patentee that he was aware of the effects of diffusion but still chose to use the word “polygonal” without modification or qualification.

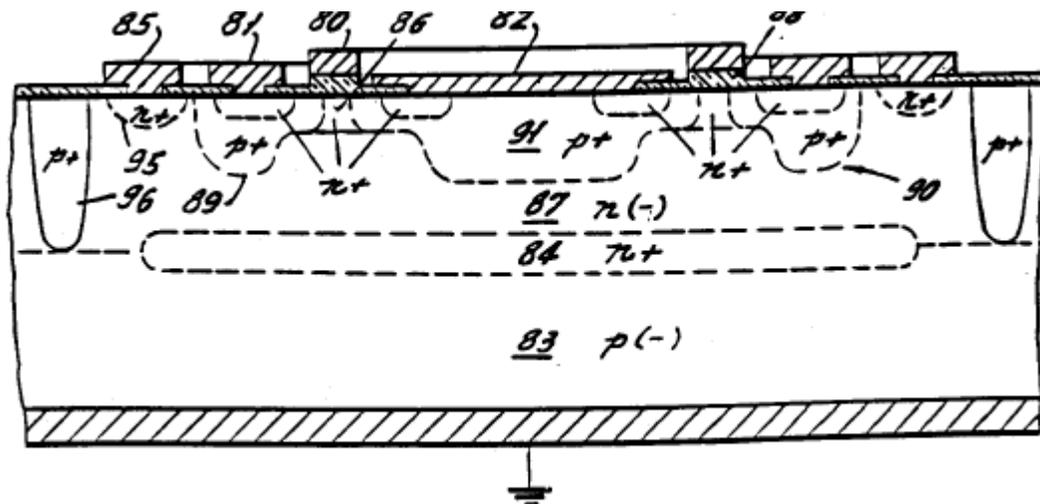
B. “Annular”

Next, the Court analyzed the District Court’s construction of the word “annular.” The District Court construed the word “annular” to mean “each claimed source has an outer and inner extent defined by generally, but not necessarily perfectly, polygonal shapes.”

Both parties and both courts agreed that the ordinary and customary meaning of annular was “of or relating to a ring; forming a ring; shaped like a ring.” The Federal Circuit noted, however, that in this case, the patentee deviated from the ordinary and customary meaning of “annular” by using the word to describe structures that were neither curved nor circular. Despite this construction, the Court ruled that the District Court’s interpretation was still too broad because the written description showed that the patentee only used the term to describe the area between two *concentric* polygons. As such, the court held that the term “annular,” as used in the UPPM patents meant “a surface area defined by two concentric polygons.”

C. “Adjoining”

Lastly, the Court construed the meaning of “adjoining.” The District Court construed adjoining to include both objects that are in close proximity to one another and objects that are in contact with one another.



As before, the Court first determined the ordinary and customary meaning of “adjoining.” For this determination, the Court looked to the dictionary and determined that “adjoining” ordinarily means “touching or bounding at a point or line.” Because the Court could not find any express disavowal or limit on the scope word “adjoining” in the

specification, they held that “adjoining” should be construed in the ordinary and customary way. The Court dismissed IR’s argument that interpreting the claims in this manner was inconsistent with the disclosed embodiment (see above), because while the regions 87 and 83 are partially separated by intervening layer 84, they are in contact (i.e., adjoining) at their respective ends. As such, the Court noted that the specification is consistent with the ordinary and customary meaning of the word “adjoining.”

2. Maybe and No. The Court remanded the claims involving “polygonal” and “annular” to the District Court for consideration consistent with the Court’s new claim construction. With regard to the claims that only involve the term “adjoining,” the Court determined that the IXYS product clearly included a buffer layer that *wholly separated* the two regions that would otherwise be “adjoining.” As such, the Court reversed the District Court’s summary judgment order of infringement and entered a judgment of non-infringement of those claims.
3. No. The District Court dismissed IXYS’s affirmative defenses of laches and estoppel, because IXYS asserted attorney-client privilege regarding several facts that IR thought were material to those defenses. The Federal Circuit determined, however, that IXYS had presented a sufficient amount of non-privileged evidence to be allowed to present these affirmative defenses at trial.
4. Yes. The District Court dismissed IXYS’s affirmative defenses of derivation and inequitable conduct, because the District Court concluded that no reasonable juror could find either (1) that the Plummer/Wood device constructed in the patentee’s lab was the same as the patentee’s invention or (2) that the existence of the Plummer/Wood device was even communicated to the inventors.

The Federal Circuit noted that derivation necessitates a two pronged inquiry: (1) prior conception of the invention by another, and (2) communication to the patentee in sufficient detail to allow successful construction and operation of the invention. The Court determined that Dr. Wood’s testimony that the two inventions were not the same was sufficient to support the District Court’s ruling. The Court also upheld the District Court’s ruling on the inequitable conduct defense because the accused conduct was based on derivation.

5. No. The Federal Circuit, in view of Ninth Circuit law, held that the case could only be remanded to a new judge if there was either personal bias or unusual circumstances. In making this determination, the Ninth Circuit considers whether (1) the original judge would have substantial difficulty putting aside his or her previous views; (2) whether a reassignment is necessary to preserve the appearance of justice; and (3) whether a reassignment would create waste and duplication that would overshadow any gain from preserving the appearance of justice. The Court ruled against IXYS because it found no evidence of personal bias and no unusual circumstances.