IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

DELTA ELECTRONICS, INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 23-1246-JLH
	)	
VICOR CORPORATION,	)	**JURY TRIAL DEMANDED**
	)	
Defendant.	)	

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Delta Electronics, Inc. ("Delta" or "Plaintiff") files this First Amended Complaint against Vicor Corporation ("Vicor" or "Defendant") and hereby alleges as follows:

THE NATURE OF THE ACTION

1. This is a civil action for patent infringement.

2. Delta is a world leader in the design, development, manufacture, and sale of semiconductor products, including power management solutions such as power converters, that are needed to power high-end electronic devices like servers. Founded in 1971, Delta has achieved great financial success due to its unmatched technical innovation and ability to offer high-performance products that are used in all manner of electronic devices. Delta's mission is to provide innovative, clean and energy-efficient solutions for a better tomorrow. To continue to innovate, Delta has invested significant resources to develop a large patent portfolio covering its semiconductor products, including its power converters.

3. Defendant Vicor competes directly against Delta for customers of power converter products, including products that are designed for the same applications as Delta's products.

4. Defendant has infringed and continues to infringe U.S. Patent Nos. 8,711,580 ("the '580 Patent") and 10,877,534 ("the '534 Patent") (collectively, "the Delta Patents"), Delta patents related to power converters, true and correct copies of which are attached hereto as Exhibits 1 and 2, respectively. Defendant has infringed and continues to infringe the Delta Patents by making, using, selling, offering for sale, and/or importing into the United States infringing components and/or exporting components specially made for use in an infringing device; and inducing others to do the same.

THE PARTIES

5. Delta is a corporation organized and existing under the laws of Taiwan, having its principal place of business at 186, Ruey Kuang Road, Neihu District, Taipei 114501, Taiwan.

6. Upon information and belief, Vicor is a corporation organized and existing under the laws of Delaware with its principal place of business at 25 Frontage Road, Andover, Massachusetts 01810.

SUBJECT MATTER JURISDICTION

7. This court has subject matter jurisdiction over the patent infringement claims asserted in this case under 28 U.S.C. §§ 1331 and 1338(a).

PERSONAL JURISDICTION, VENUE, AND JOINDER

8. This Court has personal jurisdiction over Defendant Vicor as a citizen/resident of Delaware. On information and belief, the Court further has personal jurisdiction over Vicor, because Vicor has regularly conducted and continues to conduct business in the United States, in the State of Delaware, and in this judicial district. On information and belief, Vicor has committed infringing activities in Delaware and in this judicial district by making, using, offering for sale, and/or selling in the United States and/or importing into or exporting from the

United States, products and systems that infringe upon the Delta Patents, or by placing such infringing products and systems into the stream of commerce with the awareness, knowledge, and intent that they would be used, offered for sale, or sold by others in this judicial district and/or purchased by consumers in this district.

9. Venue is proper as to Vicor pursuant to 28 U.S.C. §§ 1391(b) and 1400(b) because it is a citizen/resident of Delaware and has committed, and continues to commit, acts of infringement in this District.

THE DELTA PATENTS

10. On April 29, 2014, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 8,711,580 ("the '580 Patent"), entitled "Resonant Conversion System with Over-Current Protection Processes," listing Jinfa Zhang, Lei Cai, Jiaojun Sun, and Guodong Yin as the inventors, from a patent application filed on May 20, 2011. The '580 Patent claims priority from a China Patent Application, No. 201010187409.0, filed on May 28, 2010. A true and correct copy of the '580 Patent is attached hereto as Exhibit 1 and incorporated herein by reference.

11. On December 29, 2020, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 10,877,534 ("the '534 Patent"), entitled "Power Supply Apparatus," listing Jian-Hong Zeng as the inventor, from a patent application filed April 12, 2018. The '534 Patent granted from a divisional application of U.S. Patent Application No. 14/840,063, filed on August 31, 2015, which claims priority to China Application Serial Number 201410442972.6, filed on September 2, 2014. A true and correct copy of the '534 Patent is attached hereto as Exhibit 2 and incorporated herein by reference.

12. The '580 and '534 Patent are collectively referred to as the "Delta Patents."

13. Delta exclusively owns all rights, title, and interest in the Delta Patents necessary to bring this action, including the right to recover past and future damages.

14. Vicor is not currently licensed to practice the Delta Patents.

15. The Delta Patents are valid and enforceable.

FACTUAL BACKGROUND

16. Delta Electronics, Inc. ("Delta") was founded in 1971 by Bruce Cheng in Xinzhuang Town, Taipei County, Taiwan.

17. Since its founding, Delta has grown to become a global leader in the development and manufacturing of power and thermal management solutions. In its role as an industry leader, Delta invests significant resources to continuously optimize and improve not only its products' performance, but also their efficiency. Reaching a more sustainable future through more capable and efficient power components is one of Delta's key goals.

18. Delta's research and development has paid off. Delta offers some of the most innovative and energy efficient power products in the electronics industry, including DC to DC converters with efficiency over 90%.

19. Delta has been awarded numerous U.S. patents for the electronic components it has developed, recognizing Delta's groundbreaking research and innovation.

20. The Delta Patents are just two examples of Delta's work on the cutting-edge of power converter design.

21. The '580 Patent describes an improved design for a resonant converter system that includes protection from excessively high current.

22. The '534 Patent describes an improved design for a power supply that results in more efficient and economical power transmission.

VICOR'S INFRINGEMENT

23. Vicor has directly and indirectly infringed, and continues to infringe, one or more claims of the Delta Patents through making, using, offering for sale, and/or selling in the United States and/or importing into or exporting from the United States, products and systems that infringe upon the Delta Patents (i.e., the Vicor Accused Products), and inducing others to do the same, including Vicor's downstream customers.

24. "Vicor Accused Products" are products accused of meeting the claim limitations of the Delta Patents. Vicor designs and manufactures power converters that infringe the Delta Patents in the United States. The infringing converters have application in many types of devices designed and manufactured by Vicor's customers, including power supplies for servers.

25. Exhibit 3, demonstrating how exemplary Vicor Accused Products meet exemplary claims of the '580 Patent, is incorporated herein by reference.

26. Exhibit 4, demonstrating how exemplary Vicor Accused Products meet exemplary claims of the '534 Patent, is incorporated herein by reference.

27. According to public filings Vicor has made with the SEC, Vicor manufactures the Vicor Accused Products in the United States, at its manufacturing facility in Andover, Massachusetts.

28. According to public filings Vicor has made with the SEC, Vicor sells Vicor Accused Products both directly through its own sales force and website, as well as indirectly through a network of independent sales representatives and at least four distributors: Arrow Electronics, Inc., Digi-Key Corporation, Future Electronics Incorporated, and Mouser Electronics, Inc.

29. The Vicor Accused Products are available for direct purchase from the Vicor website.

30. Vicor maintains sales offices in the United States to sell Vicor Accused Products. For example, according to public filings Vicor has made with the SEC, Vicor makes sales of Vicor Accused Products through offices in Massachusetts, Illinois, Texas, and California.

31. Vicor also assists its customers with the design of customer products to integrate Vicor Accused Products into Vicor's customer's products, including in the United States. Field Application Engineers based in the United States provide direct technical support to Vicor's customers in the U.S., and Vicor's Product Development Engineers, located at Vicor's headquarters in Massachusetts, further support Vicor's Field Application Engineers and customers.

32. Further, in concert with its authorized distributors and customers, Vicor causes or induces infringing accused products to be made, used, offered to be sold, sold within the United States, or imported into the United States.

33. Upon information and belief, in concert with contract manufacturers, suppliers, and/or assembly facilities overseas, Vicor exports all or a substantial portion of the components of products that practice the claimed invention, or components of the claimed invention especially made or especially adapted for the use in the claimed invention.

34. Upon information and belief, Vicor actively induces the combination of such exported components into a product that practices the claimed inventions, and/or knowingly exports one or more components of Delta's patented invention intending those components to be combined in a manner that would infringe the Delta Patents if combined as such in the United States.

35. Specifically, Vicor has designed and continues to design and manufacture power converters that practice the Delta Patents. The Vicor Accused Products include, as non-limiting examples, products identified in Exhibits 3 and 4.

36. Further, upon information and belief, Vicor exports at least one component, specifically designed for use in a patented invention, to contract manufacturers overseas. Those contract manufacturers then assemble the components received from Vicor into infringing products.

37. Upon information and belief, these infringing products are then sold to Vicor's customers, who incorporate the Vicor Infringing Products into their products, such as servers. Vicor actively induces such infringement by providing datasheets and other technical and marketing materials that actively encourage Vicor's customers to incorporate and implement the Vicor Accused Products in an infringement manner. Vicor's customers' products are then imported into the United States.

38. Upon information and belief, Vicor has had knowledge of the Delta Patents and its infringement thereof since their issuance, because, as an active competitor to Delta, Vicor would have periodically investigated Delta's patent portfolio and its applicability to Vicor's products. Moreover, upon information and belief, Vicor investigated Delta's patents and applications prior to release of its products. Indeed, Vicor's CEO has testified under oath that "as part of our system for respecting intellectual property of others, we conduct thorough searches of prior art in connection with any innovation that Vicor develops." (*Synqor, Inc. v. Vicor Corp.*, Case No. 2:14-cv-287, at 1352 (Dkt. 732).)

39. Upon information and belief, Vicor has had knowledge of the Delta Patents and its infringement thereof at least by virtue of its pre-suit investigation of Delta before filing

complaints against Delta before the ITC and the Eastern District of Texas. Accordingly, Vicor has had knowledge of the Delta Patents and its infringement of the Delta Patents since at least before July 12, 2023, the date of Vicor's two previous complaints.

40. Vicor has had knowledge of the '580 Patent and its infringement thereof at least as of the filing of Delta's initial complaint for patent infringement in this action (Dkt. No. 1) on November 1, 2023, notifying Vicor of its infringement of the '580 Patent.

41. Upon information and belief, Vicor has had knowledge of the '534 Patent and its infringement thereof at least as of the filing of Delta's initial complaint for patent infringement in this action (Dkt. No. 1) on November 1, 2023 by virtue of Vicor's investigation after being notified of this Action.

42. Vicor has had knowledge of the '580 Patent and its infringement thereof at least as of September 28, 2018, when the '580 Patent was cited by a USPTO examiner in prosecution of Vicor's Patent Application 15/976,773 (issued as U.S. Pat. No. 10,205,381) which has Vicor's CEO, Patrizio Vinciarelli, as its sole inventor.

43. Vicor has had knowledge of the Delta Patents and its infringement thereof at least as of the filing of this amended complaint.

44. Vicor's infringement has been and continues to be willful.

45. As shown in Exhibit 3, the exemplary Vicor VTM 48EF060T040A00 and PRM48AF480T400A00 power converters infringe at least one claim of the '580 Patent.

46. As shown in Exhibit 4, the exemplary Vicor NBM 2317S60E1560T0R power converter infringes at least one claim of the '534 Patent.

47. Upon information and belief, Vicor designs and manufactures many different power converter devices using similar designs, many or all of which utilize Delta's protected intellectual property.

48. Upon information and belief, the Vicor power converter devices are in relevant part substantially similar to the exemplary Vicor VTM 48EF060T040A00 and PRM48AF480T400A00 power converters shown in Exhibit 3 and the Vicor NBM 2317S60E1560T0R power converter shown in Exhibit 4. Exhibits 3 and 4 are thus illustrative of the manner in which the Vicor Accused Products meet the claim limitations of the Delta Patents.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 8,711,580

49. Delta incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

50. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the Vicor Accused Products. Delta reserves the right to modify this description, including, for example, on the basis of information about the Vicor Accused Products that it obtains during discovery.

51. Vicor's infringement has damaged and continues to damage Delta in an amount yet to be determined, of at least a reasonable royalty.

52. Vicor has directly infringed the '580 Patent under 35 U.S.C. § 271(a). As alleged above and in Exhibit 3, the Vicor Accused Products, including the exemplary product analyzed in Exhibit 3, meet each and every one of the claim limitations of at least one claim of the '580 Patent.

53. As alleged above, the products analyzed in Exhibit 3 are exemplary of the Vicor Accused Products.

54. As alleged above, Vicor has infringed and continues to infringe at least one claim of the ’580 Patent by making, using, offering to sell, selling within the United States, importing into the United States, or exporting from the United States Vicor Accused Products. Defendant’s infringement is and continues to be willful.

55. As alleged above, Defendant has actively induced infringement under both 35 U.S.C. § 271(b) and § 271(f)(1) of at least one claim of the ’580 Patent. Specifically, Vicor understands, intends, and encourages its products to be incorporated into infringing downstream electronic products developed by Vicor’s customers, such as servers. Vicor sells the Vicor Accused Products to customers, either directly or indirectly, knowing and intending that the Vicor Accused Products will be implemented in an infringing manner as described in Vicor’s datasheets. In fact, Vicor actively encourages such infringement by using its datasheets and other technical and marketing materials to inform downstream customers how to incorporate the Vicor Accused Products in an infringing manner. Vicor collaborates directly with its customers to help them develop products that infringe with full knowledge of such infringement. On information and belief, Vicor also sells or otherwise supplies evaluation boards that implement the Vicor Accused Products in an infringing manner, and Vicor sells or otherwise supplies those boards both to customers within the U.S. for evaluation for potential implementation in downstream products, as well as to customers outside the U.S., such as foreign contract manufacturers. Vicor’s customer’s products, like servers, are manufactured outside the U.S. by foreign contract manufacturers, and then imported into the U.S. and/or sold throughout the U.S. by Vicor’s downstream customers and their retailers.

56. As alleged above, Defendant has actively contributed to infringement under both 35 U.S.C. § 271(c) and § 271(f)(2) of at least one claim of the ’580 Patent, because the Vicor

Accused Products constitute a material part of the infringing functionality of the ’580 Patent, and are knowingly made by Vicor for use in an infringing downstream product, such as servers. The Vicor Accused Products are not a staple article or commodity of commerce suitable for substantial noninfringing use because the datasheets and other technical and marketing materials created by Vicor for those products confirm they must be implemented in a downstream device in an infringing manner. On information and belief, Vicor also sells or otherwise supplies evaluation boards that implement the Vicor Accused Products in infringing manner, and Vicor sells or otherwise supplies those boards both to customers within the U.S. for evaluation for potential implementation in downstream products, as well as to customers outside the U.S., such as foreign contract manufacturers. Vicor’s customer’s products, like servers, are manufactured outside the U.S. by foreign contract manufacturers, and then imported into the U.S. and/or sold throughout the U.S. by Vicor’s downstream customers and their retailers.

57. Vicor’s infringement has damaged and continues to damage Delta in an amount yet to be determined, of at least a reasonable royalty.

58. As a consequence of Vicor’s infringement of the ’580 Patent, Delta has suffered and will continue to suffer irreparable harm and injury, for example, in the form of lost sales, lost profits and loss of market share. Unless enjoined, Defendant and/or others acting on behalf of Defendant will continue their infringing acts, thereby causing additional irreparable injury to Delta for which there is no adequate remedy at law. Specifically, Defendant’s actions will irreparably harm Delta’s position in the power converter market by causing Delta to lose customers.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 10,877,534

59. Delta incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

60. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the Vicor Accused Products. Delta reserves the right to modify this description, including, for example, on the basis of information about the Vicor Accused Products that it obtains during discovery.

61. Vicor's infringement has damaged and continues to damage Delta in an amount yet to be determined, of at least a reasonable royalty.

62. Vicor has directly infringed the '534 Patent under 35 U.S.C. § 271(a). As alleged above and in Exhibit 4, the Vicor Accused Products, including the exemplary product analyzed in Exhibit 4, meet each and every one of the claim limitations of at least one claim of the '534 Patent.

63. As alleged above, the products analyzed in Exhibit 4 are exemplary of the Vicor Accused Products.

64. As alleged above, Vicor has infringed and continues to infringe at least one claim of the '534 Patent by making, using, offering to sell, selling within the United States, importing into the United States, or exporting from the United States Vicor Accused Products. Defendant's infringement is and continues to be willful.

65. As alleged above, Defendant has actively induced infringement under both 35 U.S.C. § 271(b) and § 271(f)(1) of at least one claim of the '534 Patent. Specifically, Vicor understands, intends, and encourages its products to be incorporated into infringing downstream electronic products developed by Vicor's customers, such as servers. Vicor sells the Vicor

Accused Products to customers, either directly or indirectly, knowing and intending that the Vicor Accused Products will be implemented in an infringing manner as described in Vicor's datasheets. In fact, Vicor actively encourages such infringement by using its datasheets and other technical and marketing materials to inform downstream customers how to incorporate the Vicor Accused Products in an infringing manner. Vicor collaborates directly with its customers to help them develop products that infringe with full knowledge of such infringement. On information and belief, Vicor also sells or otherwise supplies evaluation boards that implement the Vicor Accused Products in an infringing manner, and Vicor sells or otherwise supplies those boards both to customers within the U.S. for evaluation for potential implementation in downstream products, as well as to customers outside the U.S., such as foreign contract manufacturers. Vicor's customer's products, like servers, are manufactured outside the U.S. by foreign contract manufacturers, and then imported into the U.S. and/or sold throughout the U.S. by Vicor's downstream customers and their retailers.

66. As alleged above, Defendant has actively contributed to infringement under both 35 U.S.C. § 271(c) and § 271(f)(2) of at least one claim of the '534 Patent, because the Vicor Accused Products constitute a material part of the infringing functionality of the '534 Patent, and are knowingly made by Vicor for use in an infringing downstream product, such as servers. The Vicor Accused Products are not a staple article or commodity of commerce suitable for substantial noninfringing use because the datasheets and other technical and marketing materials created by Vicor for those products confirm they must be implemented in a downstream device in an infringing manner. On information and belief, Vicor also sells or otherwise supplies evaluation boards that implement the Vicor Accused Products in infringing manner, and Vicor sells or otherwise supplies those boards both to customers within the U.S. for evaluation for

potential implementation in downstream products, as well as to customers outside the U.S., such as foreign contract manufacturers. Vicor's customer's products, like servers, are manufactured outside the U.S. by foreign contract manufacturers, and then imported into the U.S. and/or sold throughout the U.S. by Vicor's downstream customers and their retailers.

67. Vicor's infringement has damaged and continues to damage Delta in an amount yet to be determined, of at least a reasonable royalty.

68. As a consequence of Vicor's infringement of the '534 Patent, Delta has suffered and will continue to suffer irreparable harm and injury, for example, in the form of lost sales, lost profits and loss of market share. Unless enjoined, Defendant and/or others acting on behalf of Defendant will continue their infringing acts, thereby causing additional irreparable injury to Delta for which there is no adequate remedy at law. Specifically, Defendant's actions will irreparably harm Delta's position in the power converter market by causing Delta to lose customers.

DAMAGES

69. As a result of Vicor's acts of infringement, Delta has suffered and continues to suffer actual and consequential damages. However, Delta does not yet know the full extent of the infringement and the amount of damages cannot be ascertained except through discovery and special accounting. To the fullest extent permitted by law, Delta seeks recovery of damages at least for reasonable royalties, lost profits, unjust enrichment, and benefits received by Vicor as a result of using the patented technology. Delta further seeks any other damages to which Delta is entitled under law or in equity, including enhanced damages for Vicor's willful infringement.

DEMAND FOR JURY TRIAL

70. Delta hereby demands a jury trial for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Delta respectfully requests that this Court enter judgment in its favor as follows:

A. That Judgment be entered that Defendant has infringed one or more claims of the Delta Patents, literally and under the doctrine of equivalents;

B. That, in accordance with 35 U.S.C. § 283, Defendant and all its affiliates, employees, agents, officers, directors, attorneys, successors, and assigns and all those acting on behalf of or in active concert or participation with any of them, be preliminarily and permanently enjoined from (1) infringing the Delta Patents and (2) making, using, selling, and offering for sale, or importing into the United States, and (3) exporting from the United States one or more components of, the Vicor Accused Products;

C. That Delta be awarded damages sufficient to compensate Delta for Defendant's infringement and enhanced damages under 35 U.S.C. § 284, and an accounting of lost sales not presented at trial and an award of additional damages for any such lost sales;

D. That the case be found exceptional under 35 U.S.C. § 285 and that Delta be awarded its reasonable attorneys' fees;

E. That Delta be awarded its costs and expenses in this action;

F. That Delta be awarded damages for pre-issuance infringement under 35 U.S.C. § 154(d);

G. That Delta be awarded prejudgment and post-judgment interest; and

H. Such other and further relief as the Court may deem just and proper.

ASHBY & GEDDES

/s/ *John G. Day*

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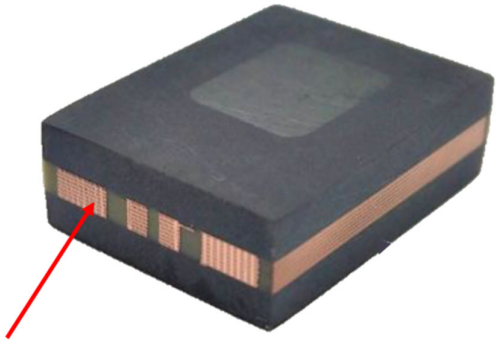
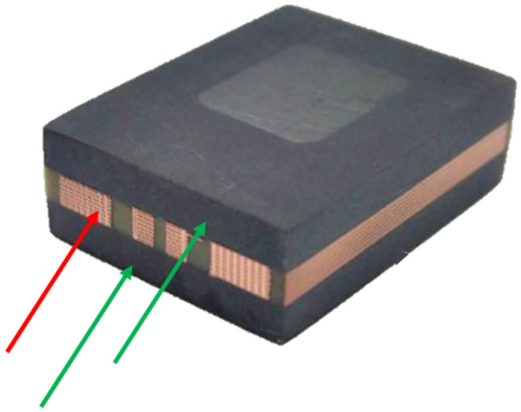
Dated: January 26, 2024

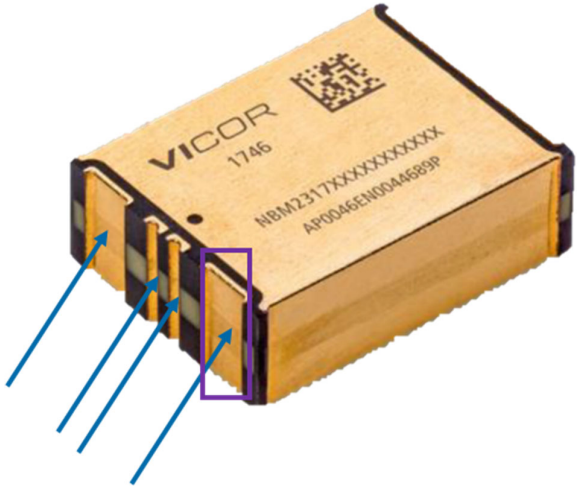
EXHIBIT 4

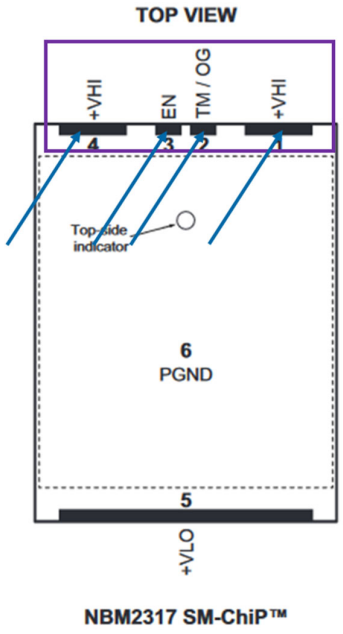
Infringement of Exemplary Claim 1 of U.S. Patent No. 10,877,534 (the '534 patent)

The accused products include, but are not limited to, Vicor's power module products, which include but are not limited to at least the following models: NBM2317S60E1560T0R, NBM2317S60D1565T0R, NBM2317S60D1580T0R, DCM3717S60E14G5TN0, PRM2313S60E54H0T00, VTM2308S60Z1513T00, and VTM2308S60Z0825T00, and Vicor's SM-ChiPs. (*See generally* Davies, Attributes of high-performance power module packaging, Vicor White Paper) (describing SM-CHiPs).) A chart of exemplary claim 1 against exemplary NBM2317S60E1560T0R is provided below.

Annotations and identification of elements in this chart are preliminary, are not final, nor are they intended to limit Plaintiff's identification of claim elements in Vicor's infringing products. Furthermore, NBM2317S60E1560T0R and claim 1 have been provided as representative, and Plaintiff reserves the right to identify additional products and claims, and identify further representative products. Plaintiff reserves the right to amend, supplement, expand, modify, or narrow its identifications in the accused products as it develops facts during discovery, based on the Court's claim constructions, or for any other allowable purpose in this action.

10,877,534	NBM2317S60E1560T0R
1. A power supply apparatus, comprising:	The NBM2317S60E1560T0R is a power supply. (*See generally* NBM2317S60D1580T0R Datasheet.)
a bearing plate;	The NBM2317S60E1560T0R has a bearing plate, annotated below with the red arrow. 
insulation material formed on two opposite surfaces of the bearing plate; and	The NBM2317S60E1560T0R has insulation material formed on two opposite surfaces of the bearing plate, annotated below with green arrows. 
a plurality of pins electrically connected to the bearing plate and allocated	The NBM2317S60E1560T0R has a plurality of pins electrically connected to the bearing plate and allocated along lateral sides of the insulation material (annotated with blue arrows), wherein two terminals of each of the pins have two SMD pads, wherein the two SMD pads of each of the pins are extending to an upper surface and a

along lateral sides of the insulation material, wherein two terminals of each of the pins have two SMD pads, wherein the two SMD pads of each of the pins are extending to an upper surface and a lower surface of the insulation material, respectively.	lower surface of the insulation material, respectively (annotated in purple).  This is also seen in the NBM2317S60E1560T0R datasheet.

	 (NBM2317S60E1560T0R Datasheet at 3.)