

Exhibit A

Infringement of Claims 1-3 and 6 of U.S. Patent No. 9,819,263 (the '263 Patent)

The accused products include, but are not limited to, Vicor's power modules produced with its SM-ChiPs packaging (*e.g.*, NBM, VTM, DCM, MCD, MCM, PRM series), which is described as "new Vicor SM-ChiP is a plated, overmolded package intended for surface-mount attachment to a printed circuit board." (*See generally* Davies, Attributes of high-performance power module packaging, Vicor White Paper) (describing SM-ChiPs) (available at <https://www.vicorpower.com/documents/whitepapers/wp-Attributes-of-High-Performance-Power-Module-Packaging-VICOR.pdf>) The SM-ChiPs include, for example, NBM series (*e.g.*, NBM2317S60E1560T0R, NBM2317S60D1565T0R, NBM2317S60D1580T0R); VTM series (*e.g.*, VTM2308 series, VTM2308S60Z0825T00, VTM2308S60Z1513T00) (*See, e.g.*, <https://www.vicorpower.com/documents/datasheets/ds-VTM2308S60Z0825T00-VICOR.pdf> and <https://www.vicorpower.com/documents/datasheets/ds-VTM2308S60Z1513T00-VICOR.pdf>); DCM series (*e.g.*, DCM3717 series, *e.g.*, DCM3717S60E14G5TN0) (<https://www.vicorpower.com/documents/datasheets/ds-DCM3717S60E14G5TN0-VICOR.pdf>); MCD & MCM series (*see, e.g.*, <https://www.vicorpower.com/documents/whitepapers/art-Electronic-Specifier-June2018.pdf>); PRM series (PRM2313 series, *e.g.*, PRM2313S60E54H0T00) (<https://www.vicorpower.com/documents/datasheets/ds-PRM2313S60E54H0T00-VICOR.pdf>), and any other product series using the SM-ChiPs package or substantially similar packaging.

Vicor further has—and continues to—indirectly infringe by inducing others (*e.g.*, third-party device implementers like NVIDIA) to infringe and has knowledge of their infringement. For example, NVIDIA's A100 and V100 incorporates Vicor's SM-ChiPs products. (*See, e.g.*, <https://vicorcorporation.gcs-web.com/static-files/80b5cb43-ec8e-40eb-813b-eaae7alc62cd> at 23.) Vicor moreover indirectly infringes by inducing others, *e.g.*, third party resellers like Arrow, to infringe and has knowledge of their infringement. (*See, e.g.*, <https://www.arrow.com/en/manufacturers/vicor>)

A chart of claims 1-3 and 6 against NBM2317S60D1580T0R is provided below, which is representative of Vicor's accused products utilizing SM-ChiPs packaging. 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. 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

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action.

U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
1. A power converter, comprising:	The NBM2317S60D1580T0R provides a power converter. As described in the NBM2317S60D1580T0R datasheet, NBM2317S60D1580T0R is a high-efficient Non-Isolated Bus Converter operating from a 40 to 60 V_{DC} high-side voltage bus to deliver a ratio-metric low-side voltage from 10 to 15 V_{DC}. See NBM2317S60D1580T0R Datasheet at 1. Other products utilizing the SM-ChiPs packaging (e.g., VTM, DCM, MCD, PRM) have packaging similar to the NBM series. <u>NBM:</u> 

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VTM, DCM, MCD, MCM, PRM:



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U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
	
1a. a carrier, comprising: an upper surface; and a lower surface;	The NBM2317S60D1580T0R provides a carrier comprising an upper surface and a lower surface, which are illustrated in the product, the 2D cross section, and the 3D image representation below. Therefore, each element in this limitation is literally present in NBM2317S60D1580T0R.

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U.S. PATENT NO. 9,819,263	U.S. PATENT NO. 9,819,263 NBM2317S60D1580T0R Product Representation 2D Representation 3D Representation
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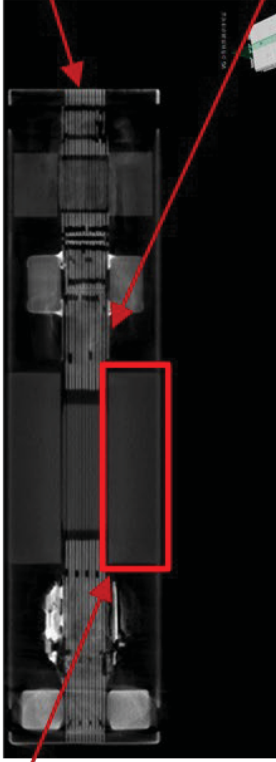
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
<u>1b.</u> a first electronic component disposed at the lower surface of the carrier;	The NBM2317S60D1580T0R provides a first electronic component disposed at the lower surface of the carrier, which are illustrated in the product, the 2D cross section, and the 3D image representation below. First Electronic Component  Carrier Lower Surface First Electronic Component  Carrier Lower Surface <i>Product Representation</i>

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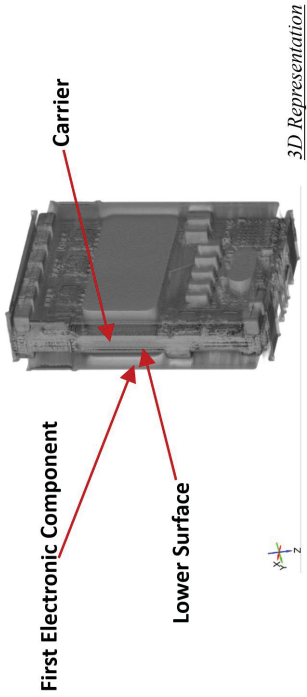
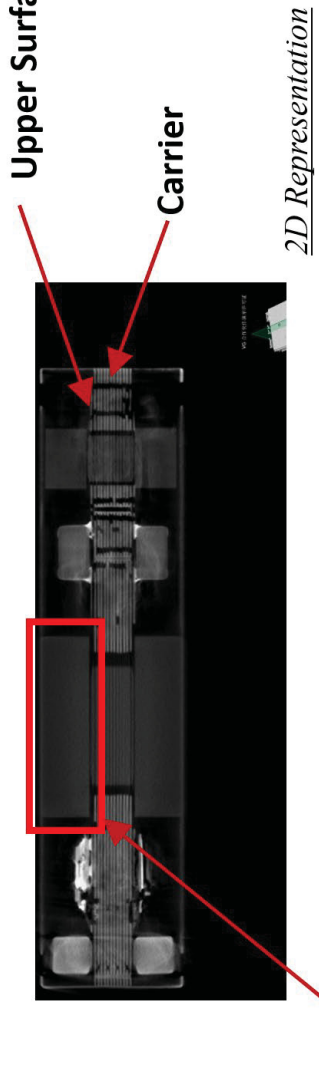
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
	 <i>3D Representation</i>
1c. a second electronic component disposed at the upper surface of the carrier;	The NBM2317S60D1580T0R provides a second electronic component disposed at the upper surface of the carrier.  <i>2D Representation</i>

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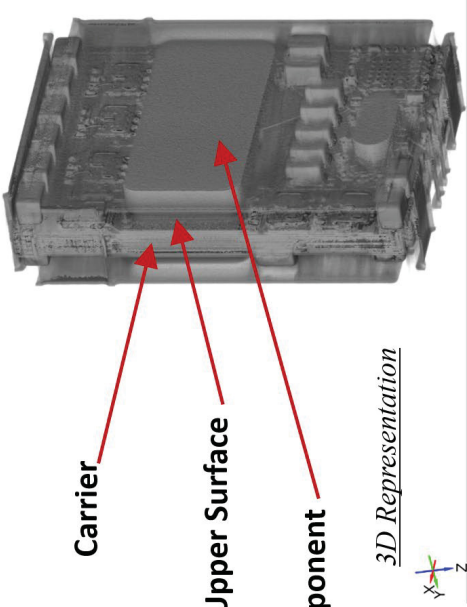
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R  Carrier Upper Surface Second Electronic Component <i>3D Representation</i> 
<u>1d.</u> a first connection part, comprising: a first terminal electrically coupled to the upper surface or the lower surface of the carrier; and	The NBM2317S60D1580T0R provides a first connection part comprising a first terminal that is electrically coupled to the upper surface or the lower surface of the carrier, as illustrated in the product below.

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U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
	First Terminal First Electronic Component  Below is an overhead view of the NBM2317S60D1580T0R illustrating an upper surface of the carrier where the carrier has MOSFET connections, electrically coupled to the first terminal. The MOSFET array is mounted on the mounting pads, which are exposed on the surface of the carrier and represent “the upper surface or lower

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	surface of the carrier,” as recited in the claim. The image consists of two parts. The top part is a top-down view of a carrier with a MOSFET mounted on its surface. The MOSFET is labeled 'MOSFET'. Its first terminal is labeled 'First Terminal'. The MOSFET is mounted on the carrier via 'MOSFET Mounting Pads'. The bottom part is a cross-sectional view (A-A') of the carrier, showing the MOSFET mounted on the upper/lower surface of the carrier. The MOSFET terminals are electrically connected to the first terminal through vias. The cross-sectional view also illustrates the first terminal and a MOSFET pin. Below is a cross-sectional view (A-A') of the carrier showing the MOSFET terminals on the upper/lower surface of the carrier. This cross-sectional view also illustrates the first terminal. The MOSFET terminals are electrically connected to the first terminal through vias. Additionally, an enlarged view of the first terminal and a MOSFET pin is illustrated below.

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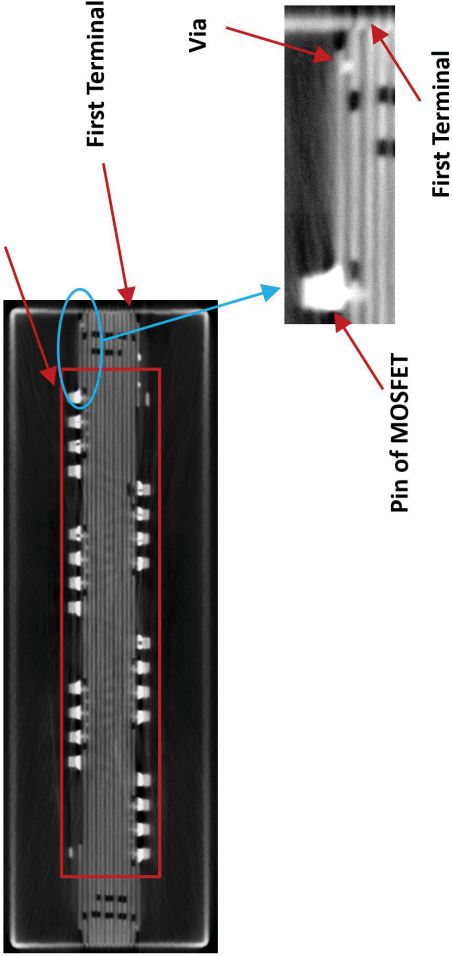
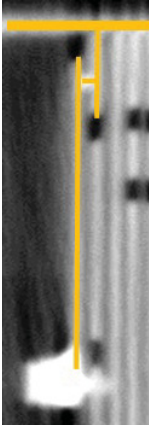
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R  The electrical path from the first terminal to the upper surface of the carrier is illustrated below in yellow. 
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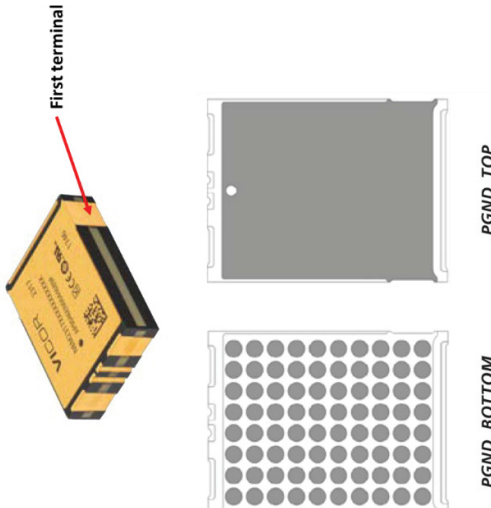
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
	The NBM2317S60D1580T0R Datasheet illustrates that the first terminal provides a PGND which is a common ground terminal for the device. <i>See, e.g., NBM2317S60D1580T0R Datasheet at 1, 3, 22. Further, the ground terminal is connected to the upper or lower surface of the carrier, as illustrated below. See id.</i> 
a second terminal attached to a surface of the first electronic component apart from the carrier, wherein the second terminal of the first connection part is a bonding	The NBM2317S60D1580T0R provides a second terminal attached to a surface of the first electronic component apart from the carrier, as illustrated, below, on the surface of the product as well as on the 2D cross-sectional scan.

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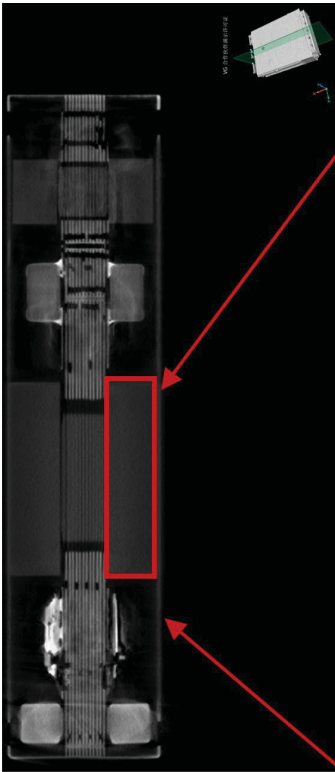
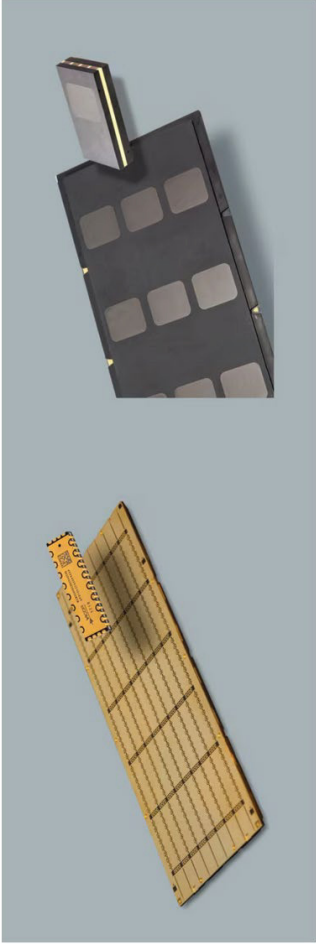
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
pad;	  The NBM2317S60D1580T0R datasheet illustrates terminal configuration of the device and represents that the second terminal of the first connection part is a bonding pad. <i>See, e.g., NBM2317S60D1580T0R Datasheet at 3, 25.</i>

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	<i>Front View Representation of Product</i> Second height, H2 1728.60 μm H3, Thickness of the carrier 1516.12 μm First height, H1 1716.82 μm 2/3 (3307.69 μm) 1/3 (1653.85 μm) 132.30 μm First Electronic Component Second Terminal of the First Connection Part The NBM2317S60D1580T0R provides that the first connection part is fabricated by mechanical support of the first electronic component, as illustrated by the product representation below. Additionally, Figure 4 depicts a manufacturing process where “ChIPs are made and cut from a standard-size panel” and where “the first connection part is fabricated by mechanical support of the first electronic component.”

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	 Figure 4: The new panel manufacturing process was another innovation for the power industry. Chips are all cut from the same size panel, enabling an automated high-volume manufacturing process. (Curatolo, Innovating Power Module Packaging at FIG. 4, available at https://www.vicorpower.com/resource-library/articles/innovating-power-module-packaging)
	Vicor is liable for literal infringement of claim 1 of the '263 Patent under 35 U.S.C. § 271, and these elements are embodied under the doctrine of equivalents, as there are no substantial differences and each asserted claim element performs substantially the same function, in substantially the same way, to achieve substantially the same result.
2. The power converter of claim 1,	As discussed above the NBM2317S60D1580T0R provides a power converter.
2a. further comprising a plurality of first electronic components and a plurality of second electronic components and a plurality	NBM2317S60D1580T0R provides a plurality of first electronic components and a plurality of second electronic components, as illustrated in the product's 2D cross-sectional representation below.

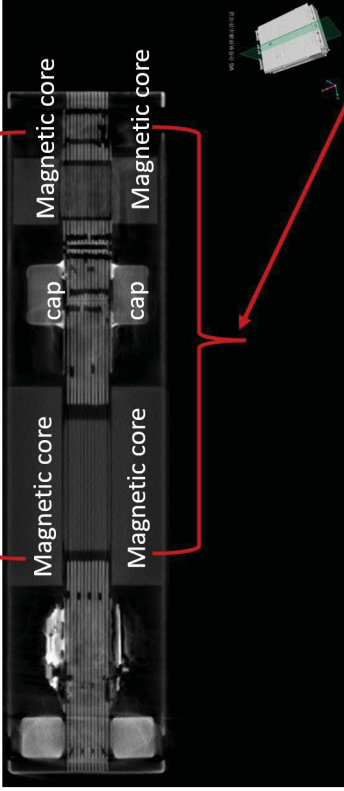
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of second electronic components, wherein a first height is defined as a vertical height between the highest one of the first electronic components and the lower surface of the carrier, a second height is defined as a vertical height between the highest one of the second electronic components and the upper surface of the carrier, and the height of the power converter is calculated by adding the first height, the second height and thickness of the carrier.	A Plurality of Second Electronic Components  A Plurality of First Electronic Components NBM2317S60D1580T0R further provides a first height that is defined as a vertical height between the highest one of the first electronic components and the lower surface of the carrier. NBM2317S60D1580T0R also has a second height that is defined as a vertical height between the highest one of the second electronic components and the upper surface of the carrier. Further, the height of the power converter in NBM2317S60D1580T0R is equivalent to the sum of the first height (H1), second height (H2), and the thickness of the carrier (H3), as illustrated below in the microscopic view of front view of NBM2317S60D1580T0R.

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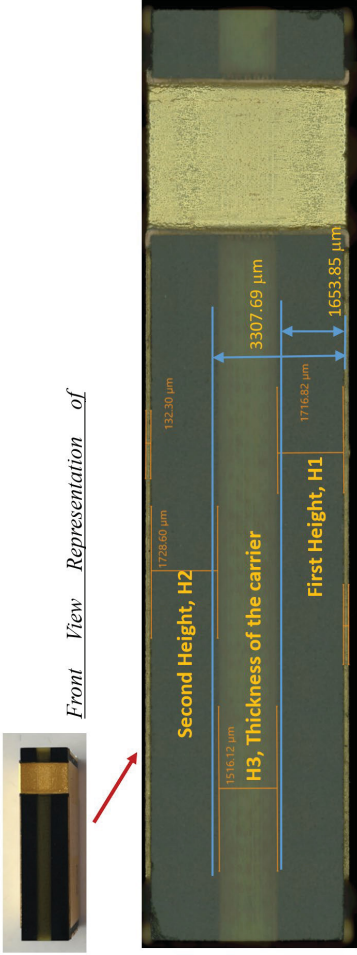
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
	 <i>Front View Representation of</i> Vicor is liable for literal infringement of claim 2 of the '263 Patent under 35 U.S.C. § 271, and these elements are embodied under the doctrine of equivalents, as there are no substantial differences and each asserted claim element performs substantially the same function, in substantially the same way, to achieve substantially the same result.
3. The power converter of claim 1,	As discussed above the NBM2317S60D1580T0R provides a power converter.
3a. wherein a height of the first electronic component is equal to a height of the second electronic component.	In the NBM2317S60D1580T0R the height of the first electronic component is equal to the height of the second electronic component, which are clearly illustrated in the 2D cross section below. Therefore, each element in this limitation is literally present in NBM2317S60D1580T0R.

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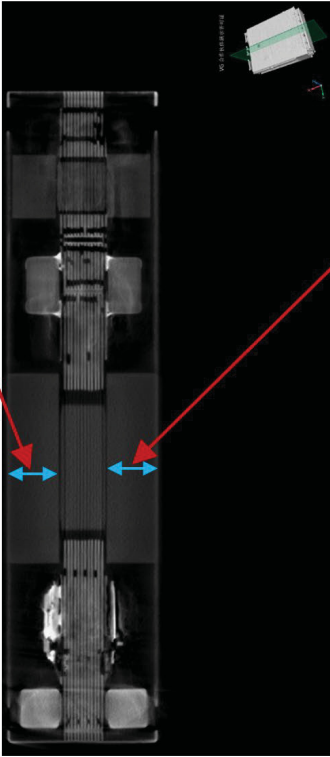
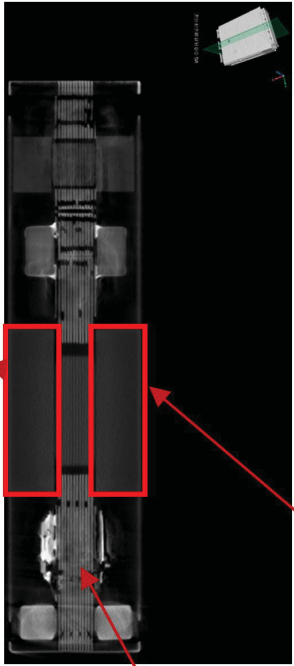
U.S. PATENT NO. 9,819,263	NBM2317S60D1580T0R
	Height of the Second Electronic Component  Height of the First Electronic Component Vicor is liable for literal infringement of claim 3 of the '263 Patent under 35 U.S.C. § 271, and these elements are embodied under the doctrine of equivalents, as there are no substantial differences and each asserted claim element performs substantially the same function, in substantially the same way, to achieve substantially the same result.
6. The power converter of claim 1,	As discussed above the NBM2317S60D1580T0R provides a power converter.
6a. wherein the first electronic component, the second electronic component and the carrier are used to form a	The NBM2317S60D1580T0R uses the first electronic component, the second electronic component, and the carrier to form a transformer, where the first electronic component and the second electronic component make up part of the transformer core.

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transformer, and the first electronic component and the second electronic component are respectively parts of a core of the transformer.	 Carrier First Electronic Component Second Electronic Component As described in the NBM2317S60D1580T0R datasheet, NBM2317S60D1580T0R is capable of current sharing. <i>See e.g.</i>, NBM2317S60D1580T0R Datasheet at 20. The device's performance is based on the efficient transfer of energy through an auto-transformer. <i>See id.</i> This removes the necessity for a closed loop control. Vicor is liable for literal infringement of claim 6 of the '263 Patent under 35 U.S.C. § 271, and these elements are embodied under the doctrine of equivalents, as there are no substantial differences and each asserted claim element performs substantially the same function, in substantially the same way, to achieve substantially the same result.