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(54) **POWER CONVERTER HAVING A SOLID-STATE TRANSFORMER AND A HALF BRIDGE CONVERTER STAGE FOR EACH ISOLATED DC OUTPUT OF THE SOLID-STATE TRANSFORMER**

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ABSTRACT

A power converter includes: a solid-state transformer having a DC input and isolated DC outputs; a half bridge converter stage for each isolated DC output of the solid-state transformer, wherein an input of each half bridge converter stage is connected to the corresponding isolated DC output and an output of the half bridge converter stages are electrically connected in a cascade configuration; an output inductor shared by the half bridge converter stages and configured to deliver an output current; and a controller configured to implement phase shift control of the half bridge converter stages relative to one another, based on the number of half bridge converter stages and an output voltage of the power converter being regulated, such that each half bridge converter stage processes the full output current but only a fraction of the output voltage. Methods of controlling the power converter are also described.

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