

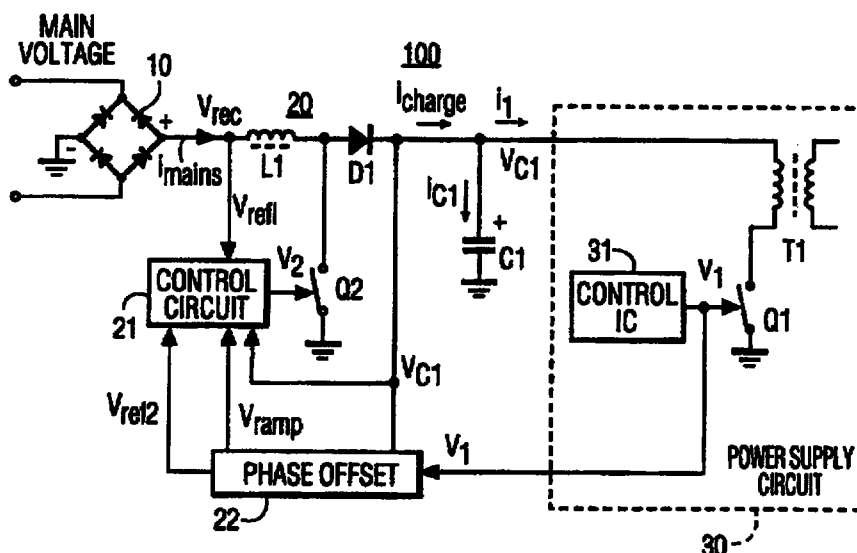
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(54) Title: SWITCHED-MODE POWER SUPPLY WITH SYNCHRONOUS PRECONVERTER



(57) Abstract

A power supply (100) comprises: a rectifier (10); a power preconverter (20) coupled to the rectifier (10); a switched-mode power supply circuit (30) coupled to the power preconverter (20); and, a phase control circuit (21, 22) for synchronizing operation of the power preconverter (20) with operation of the switched-mode power supply circuit (30). An energy storage device (C1) may be coupled to the power preconverter (20) and to the switched-mode power supply circuit (30). A preconverter switch (Q2) conducts during each time interval that a power switch (Q1) in the switched-mode power supply circuit (30) conducts in order, for example, to charge the energy storage device (C1). The preconverter switch (Q2) begins conducting only after each time interval begins and always stops conducting before each time interval ends. In a portion of the time interval after the preconverter switch (Q2) has stopped conducting, a current can flow directly from the power preconverter (20) to the switched-mode power supply circuit (30) without, for example, charging the energy storage device (C1).