

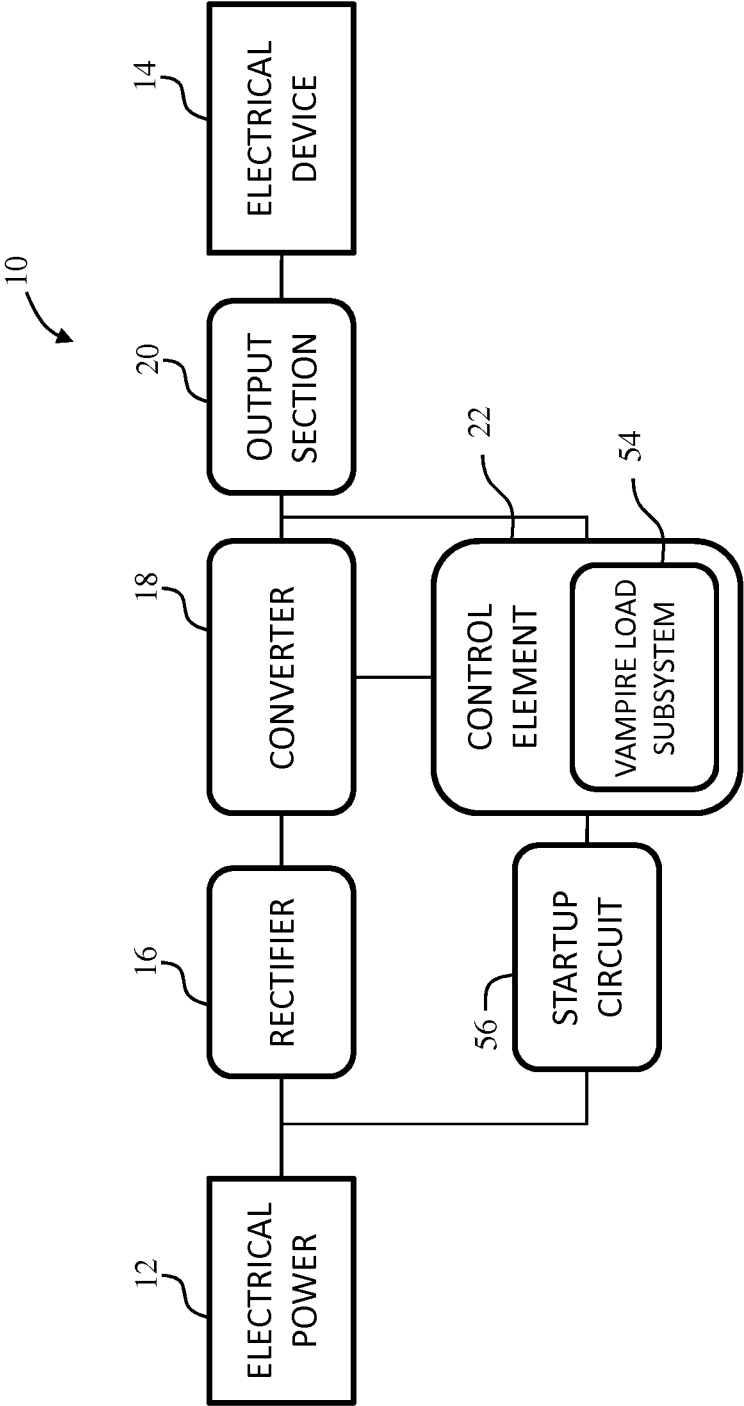
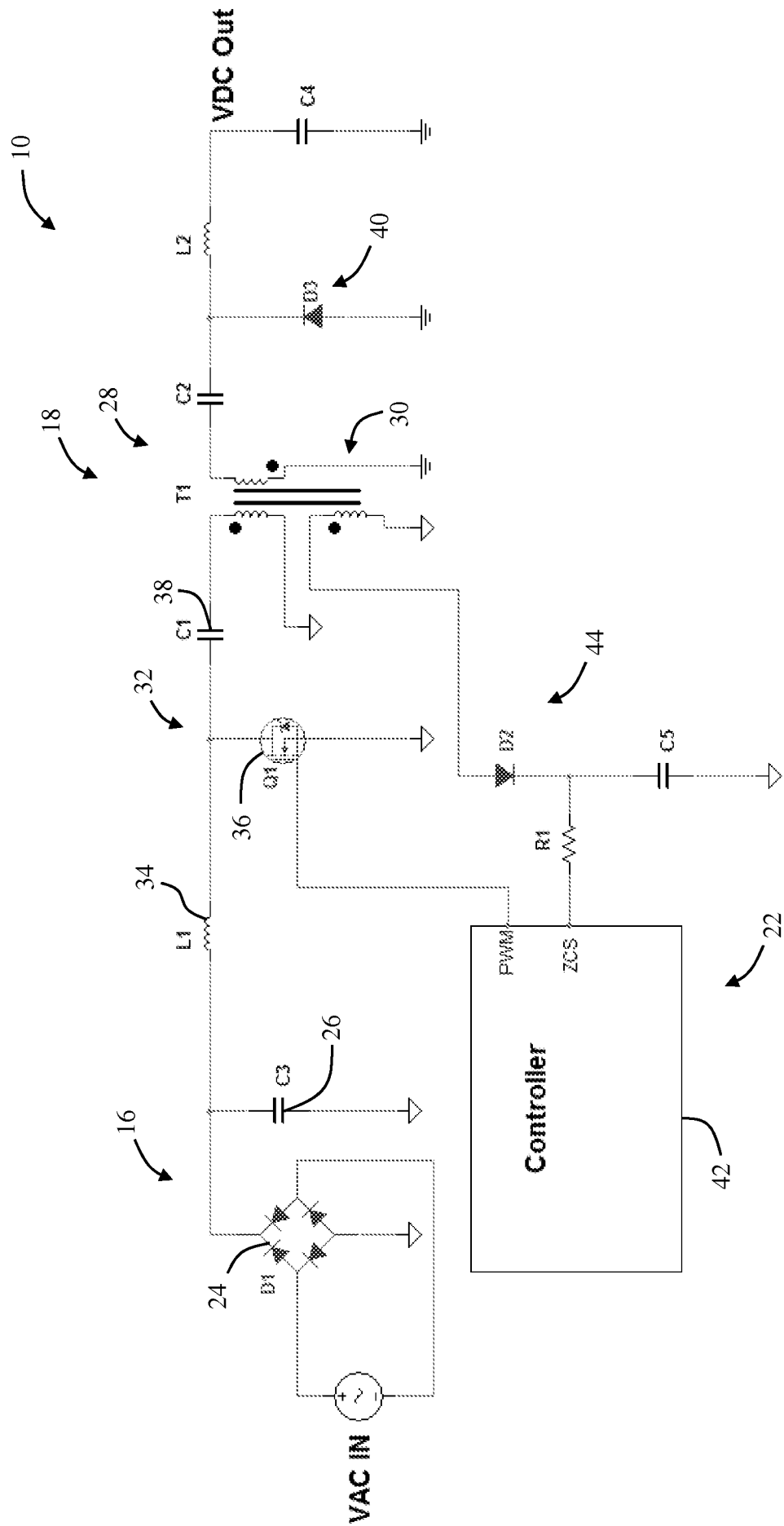
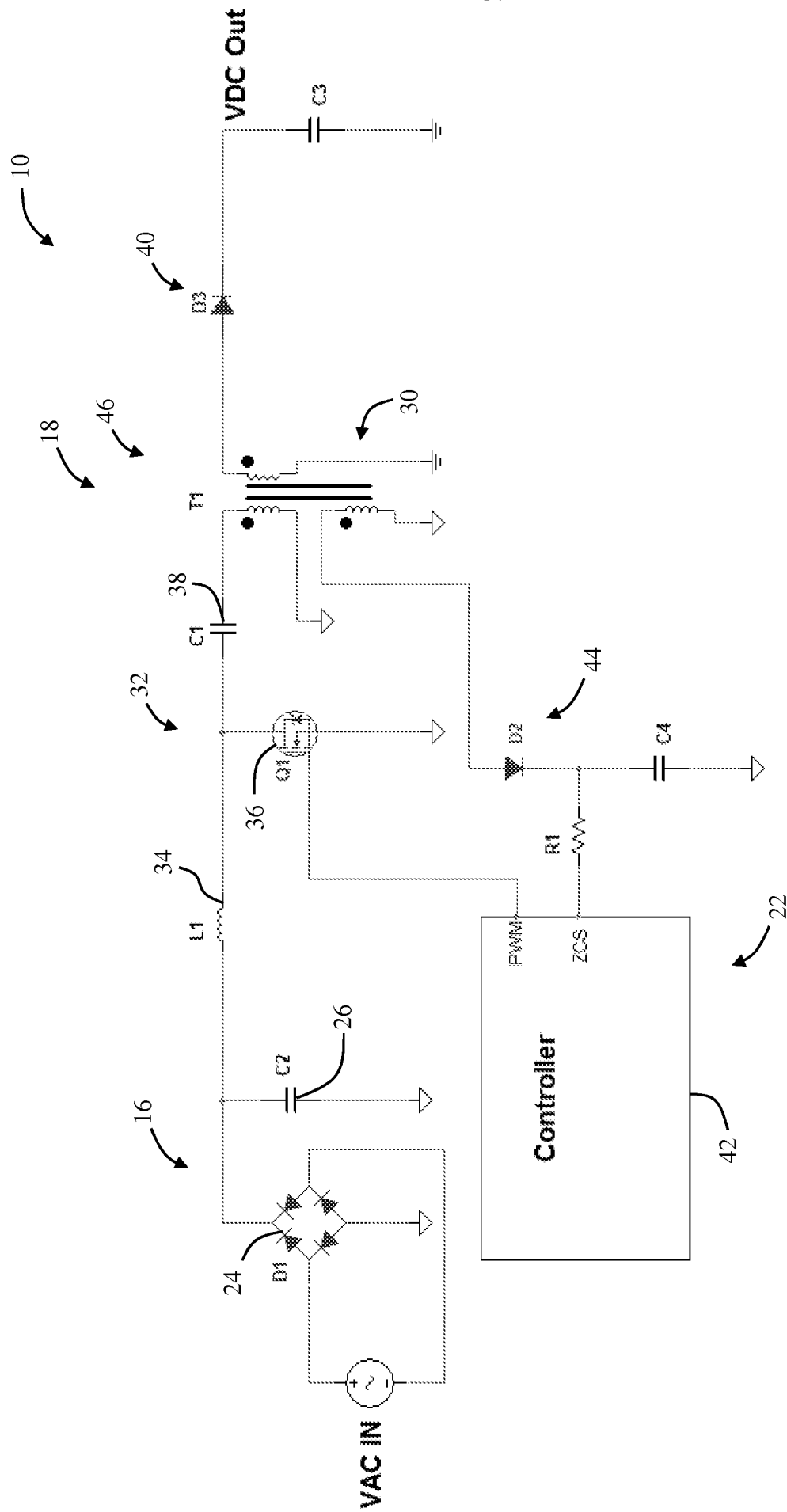


FIG. 1



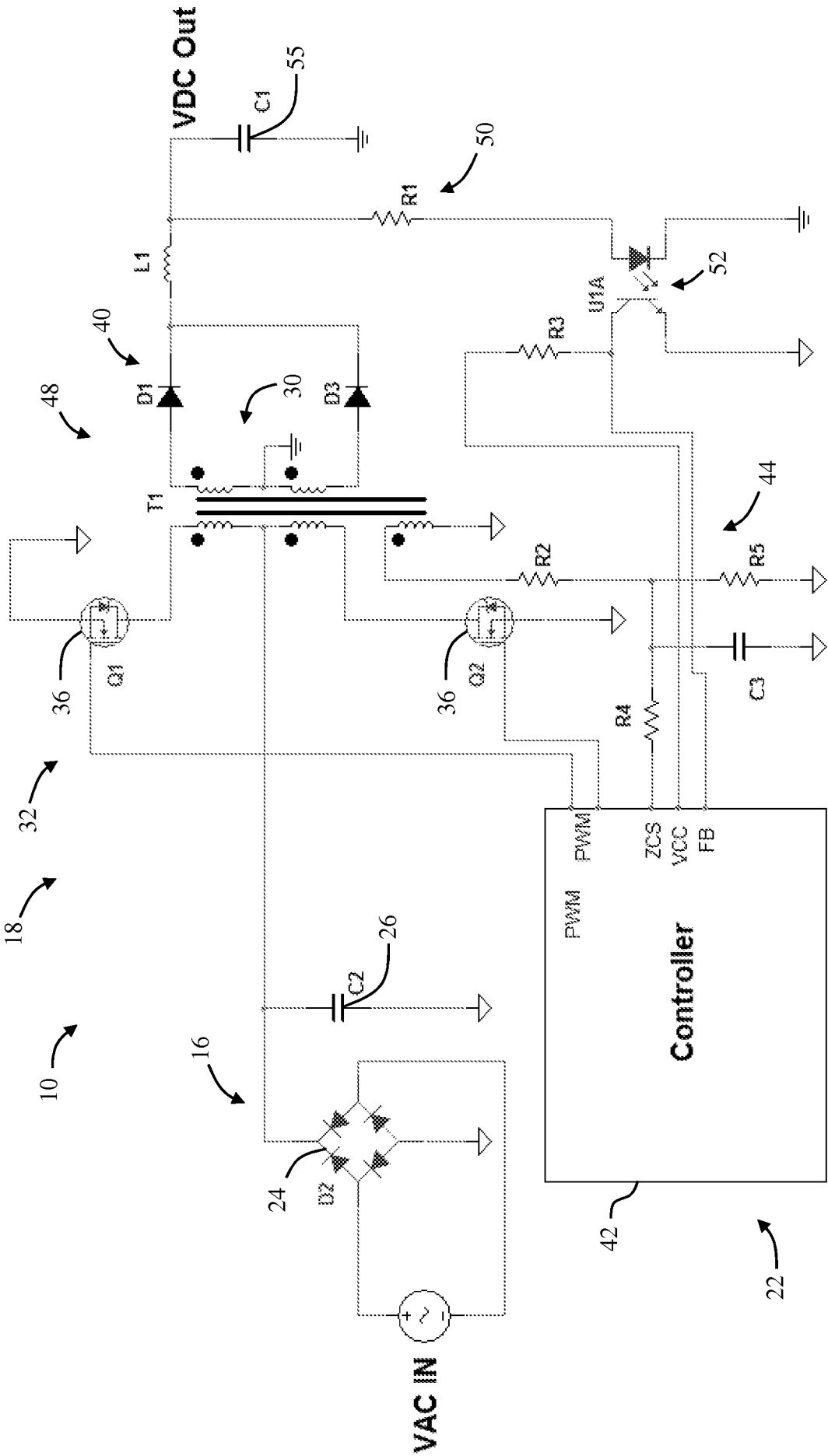
Asynchronous Modified Çuk Converter

FIG. 2



Asynchronous Modified SEPIC Converter

FIG. 3



Asynchronous Modified Push-Pull Converter

FIG. 4

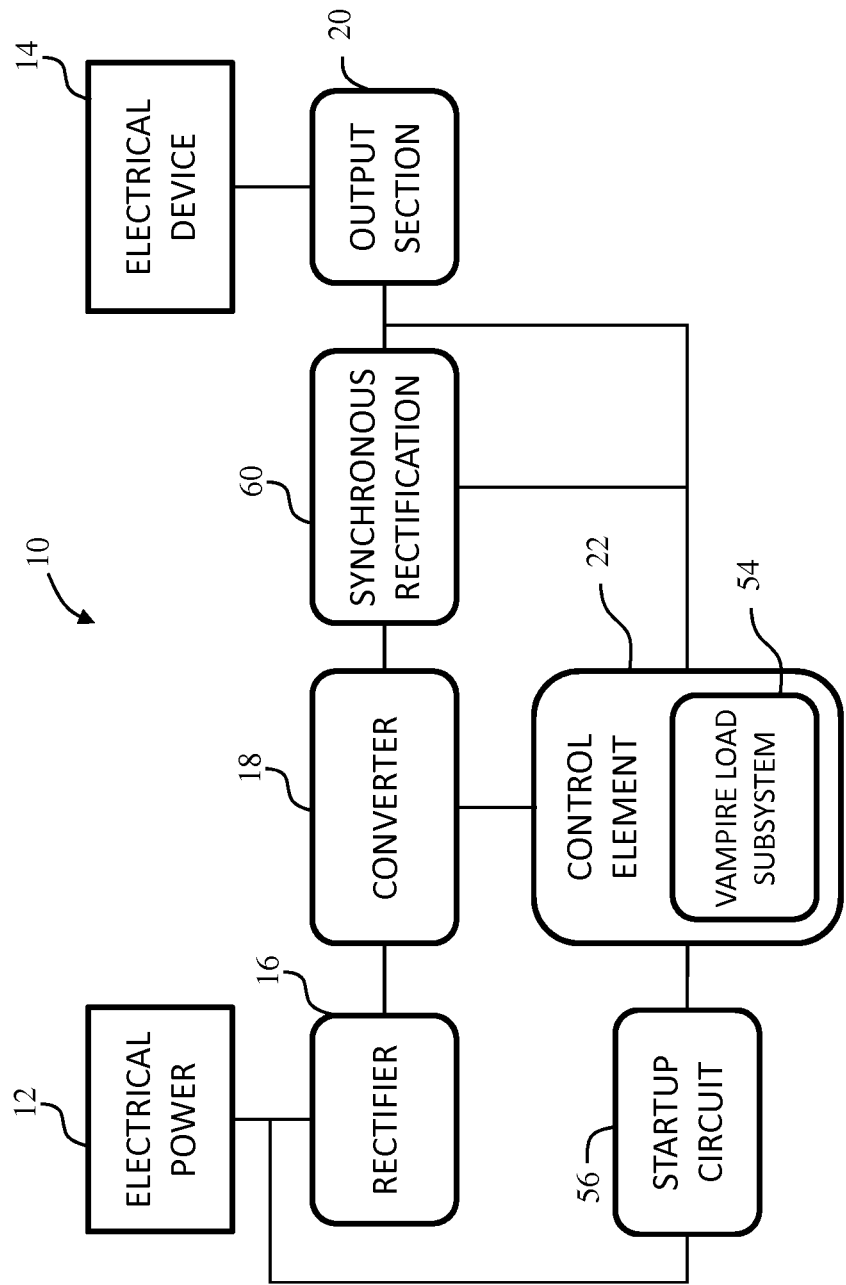
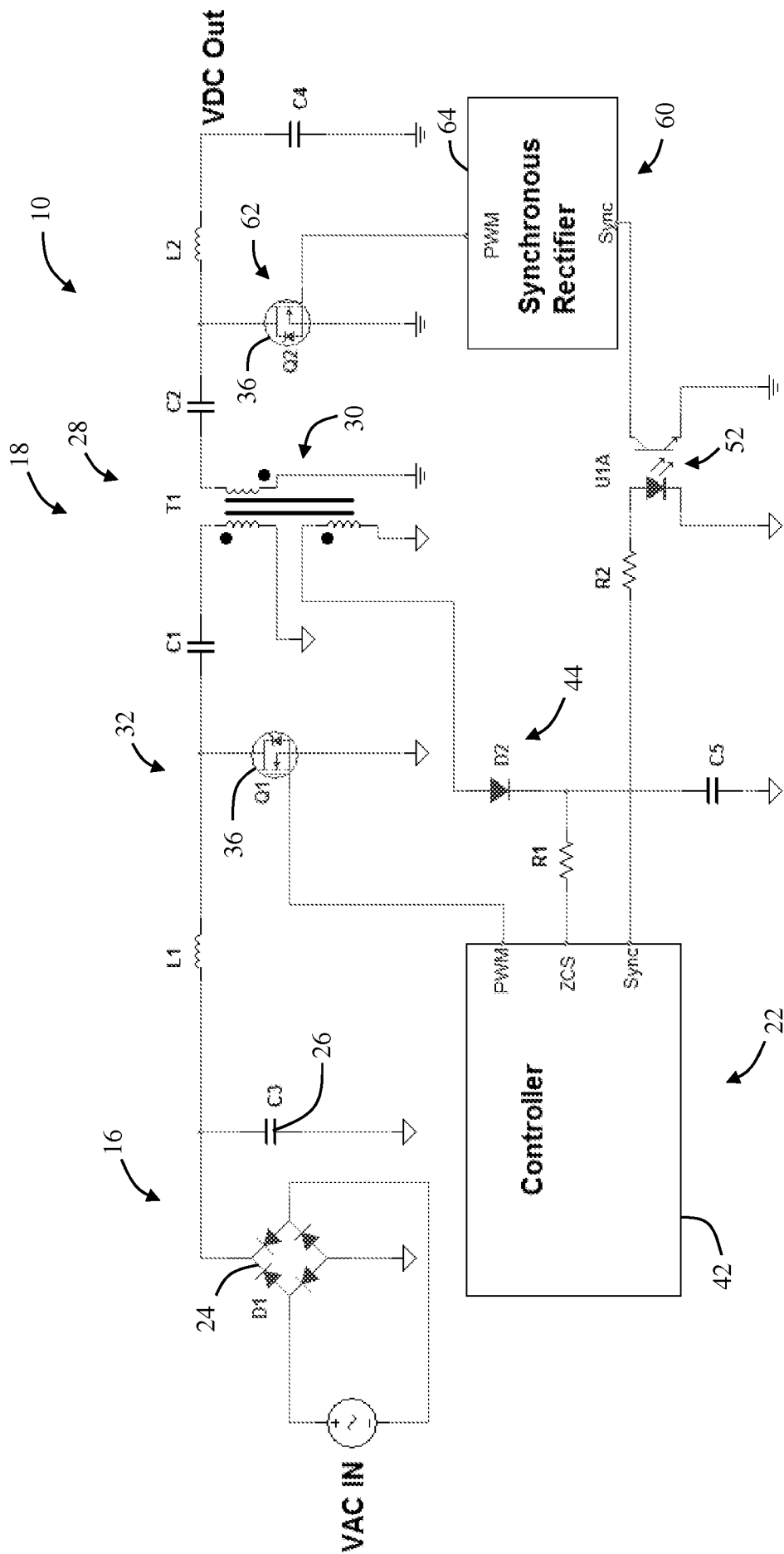
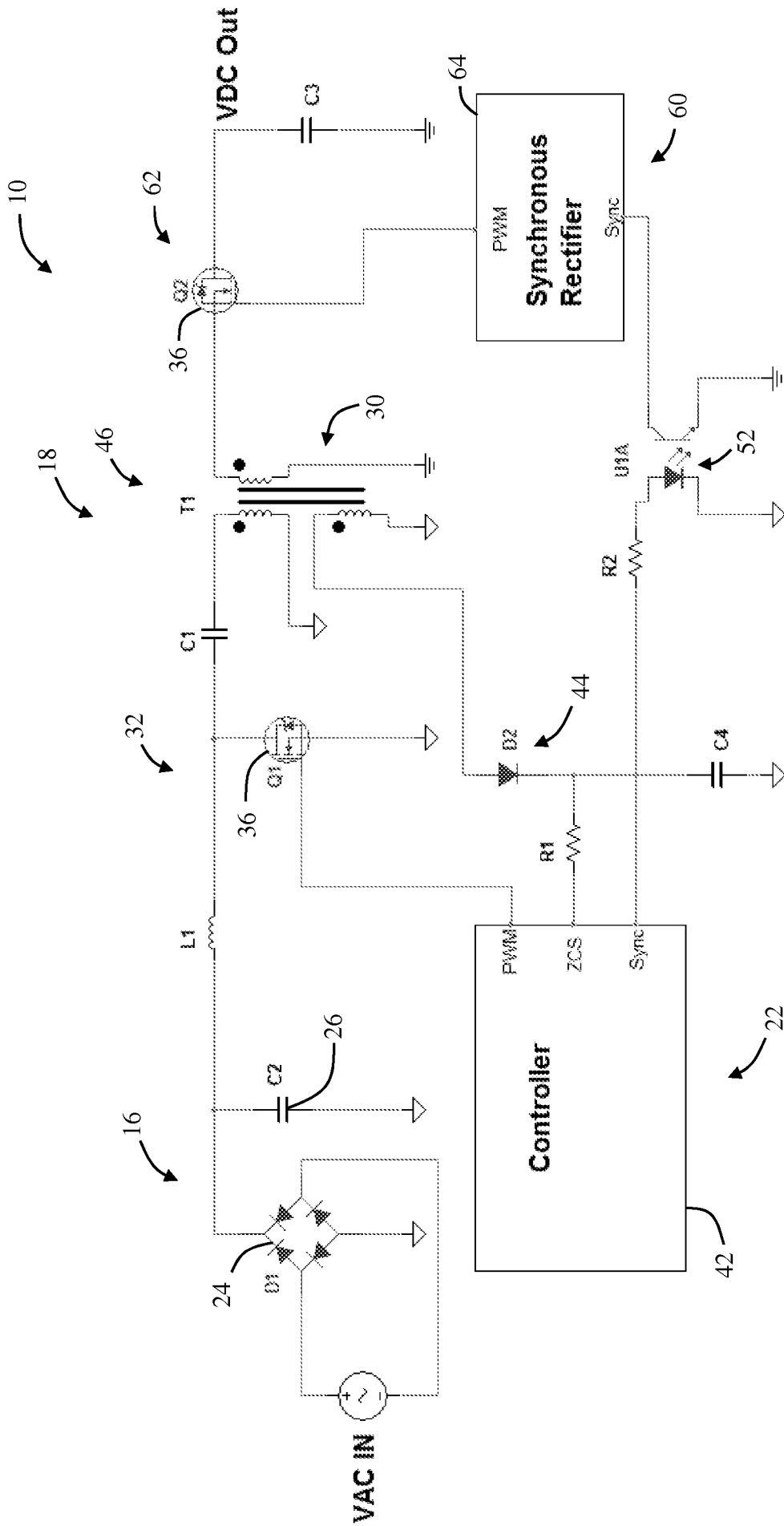


FIG. 5



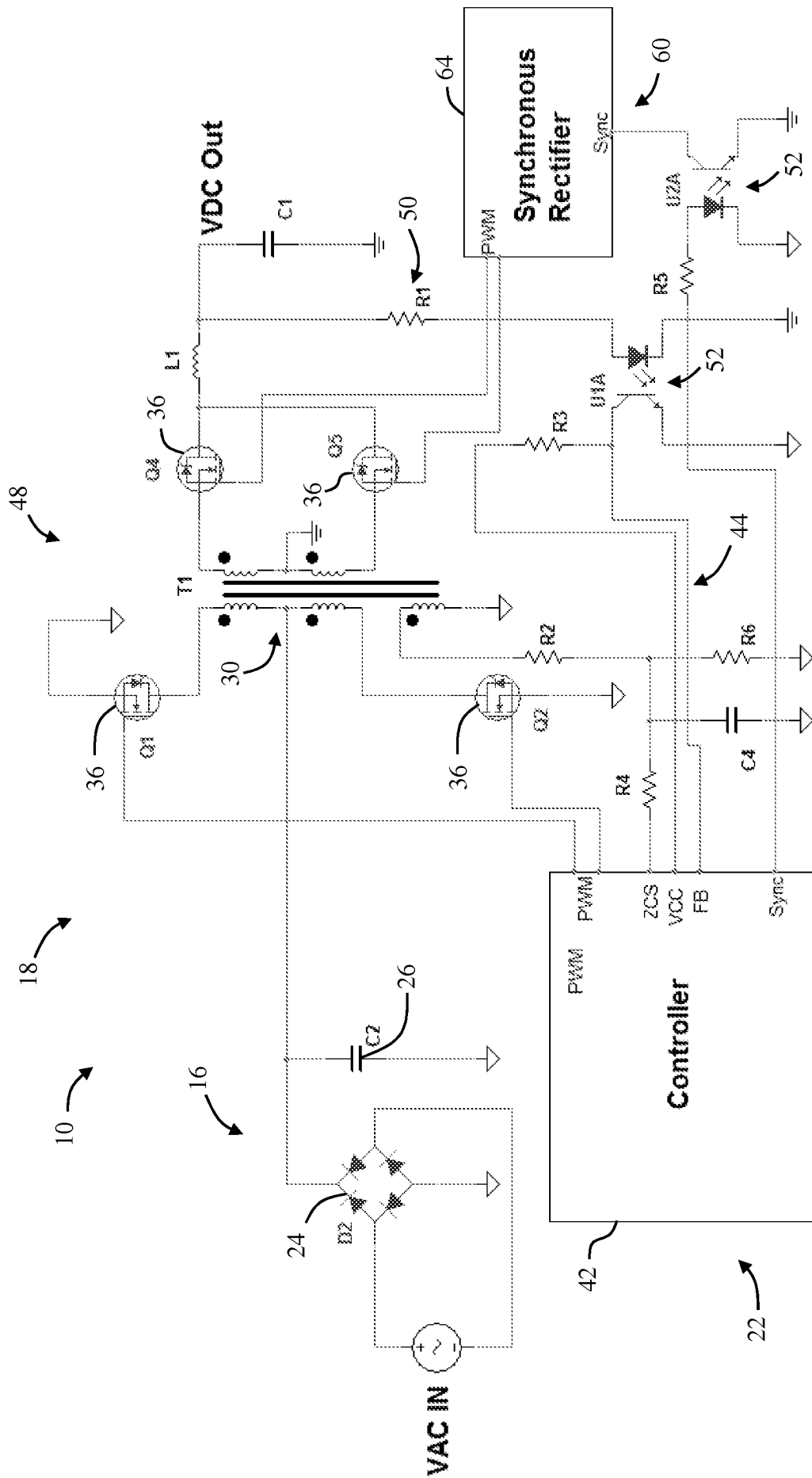
Synchronous Modified Çuk Converter

FIG. 6



Synchronous Modified SEPIC Converter

FIG. 7



Synchronous Modified Push-Pull Converter

FIG. 8

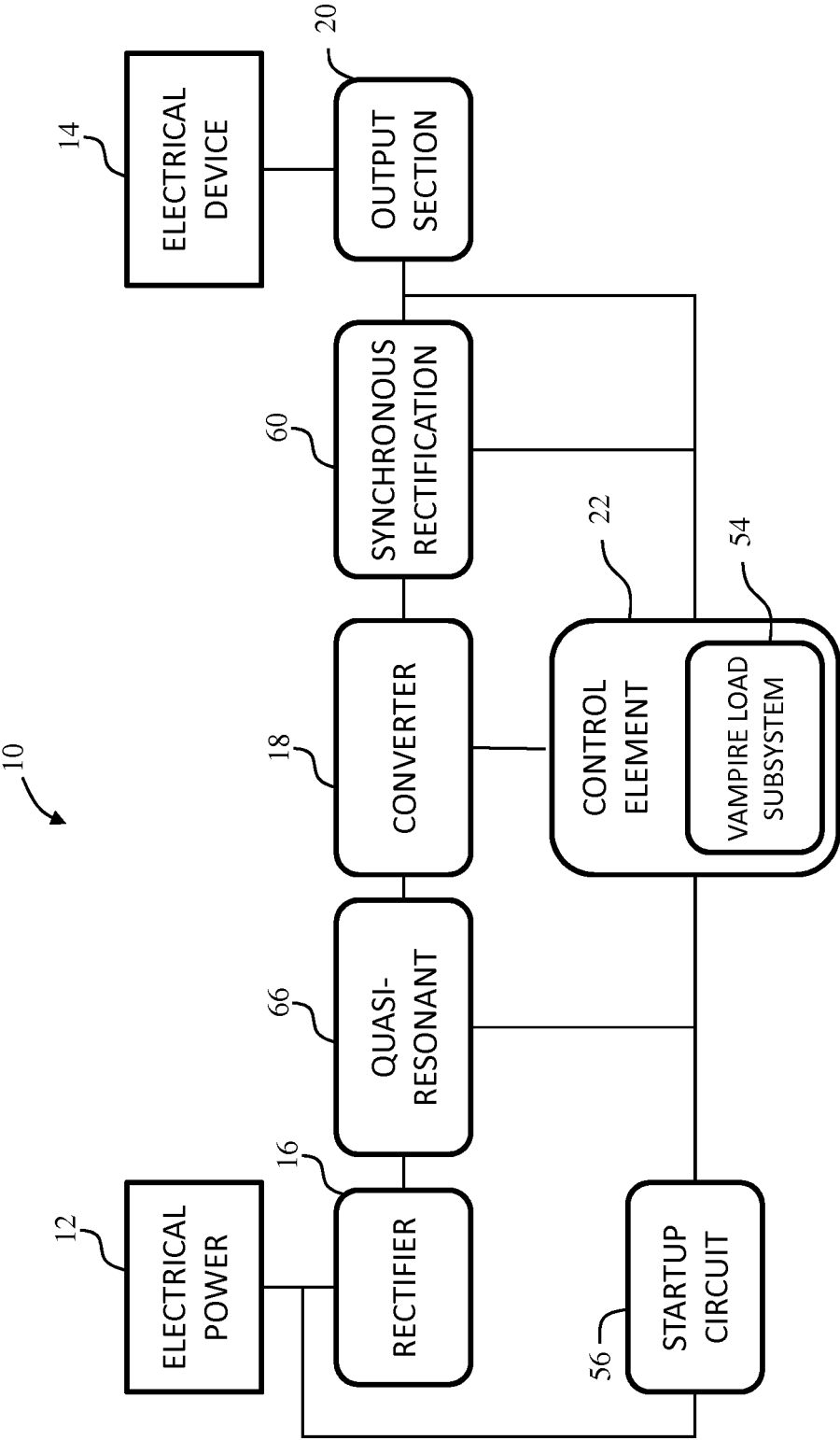
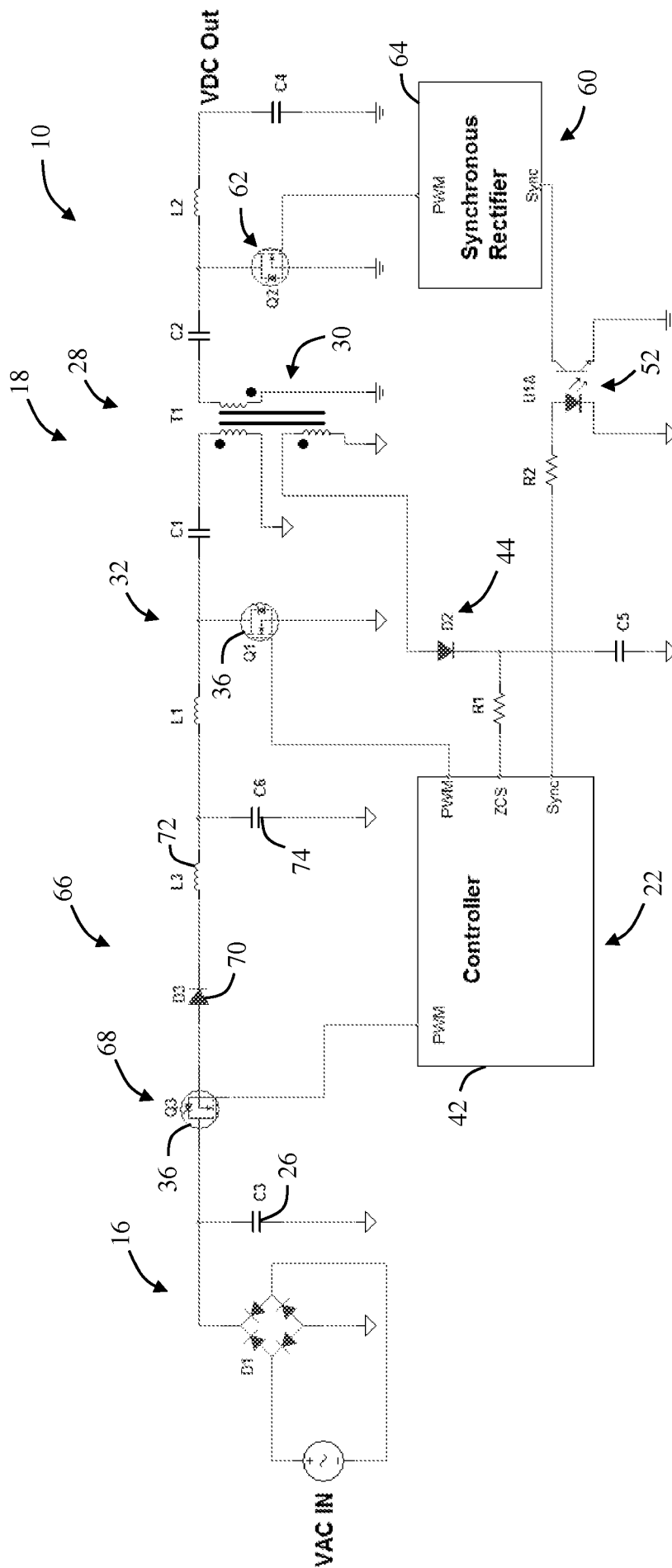
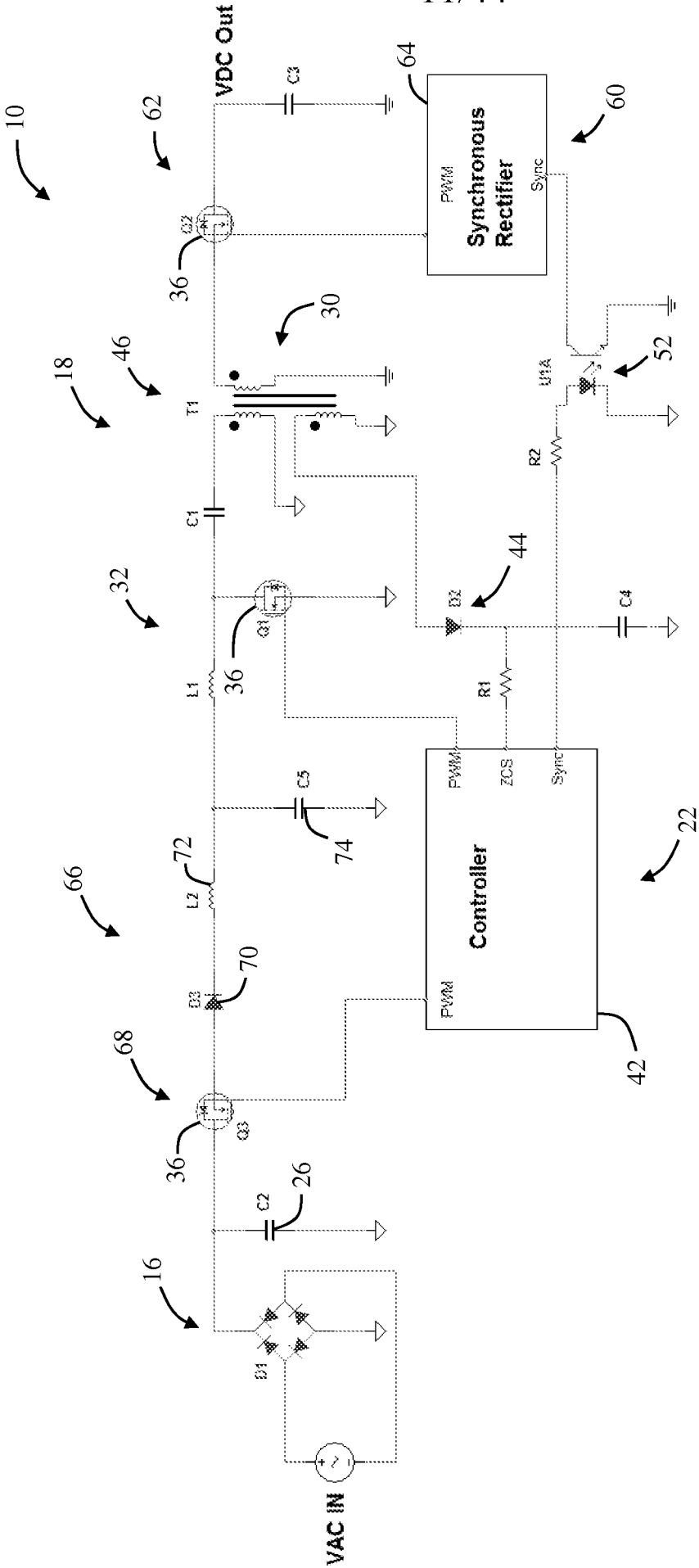


FIG. 9



Synchronous Modified Çuk Converter with Quasi-Resonant Front End

FIG. 10



Synchronous Modified SEPIC Converter With Quasi-Resonant Front End

FIG. 11

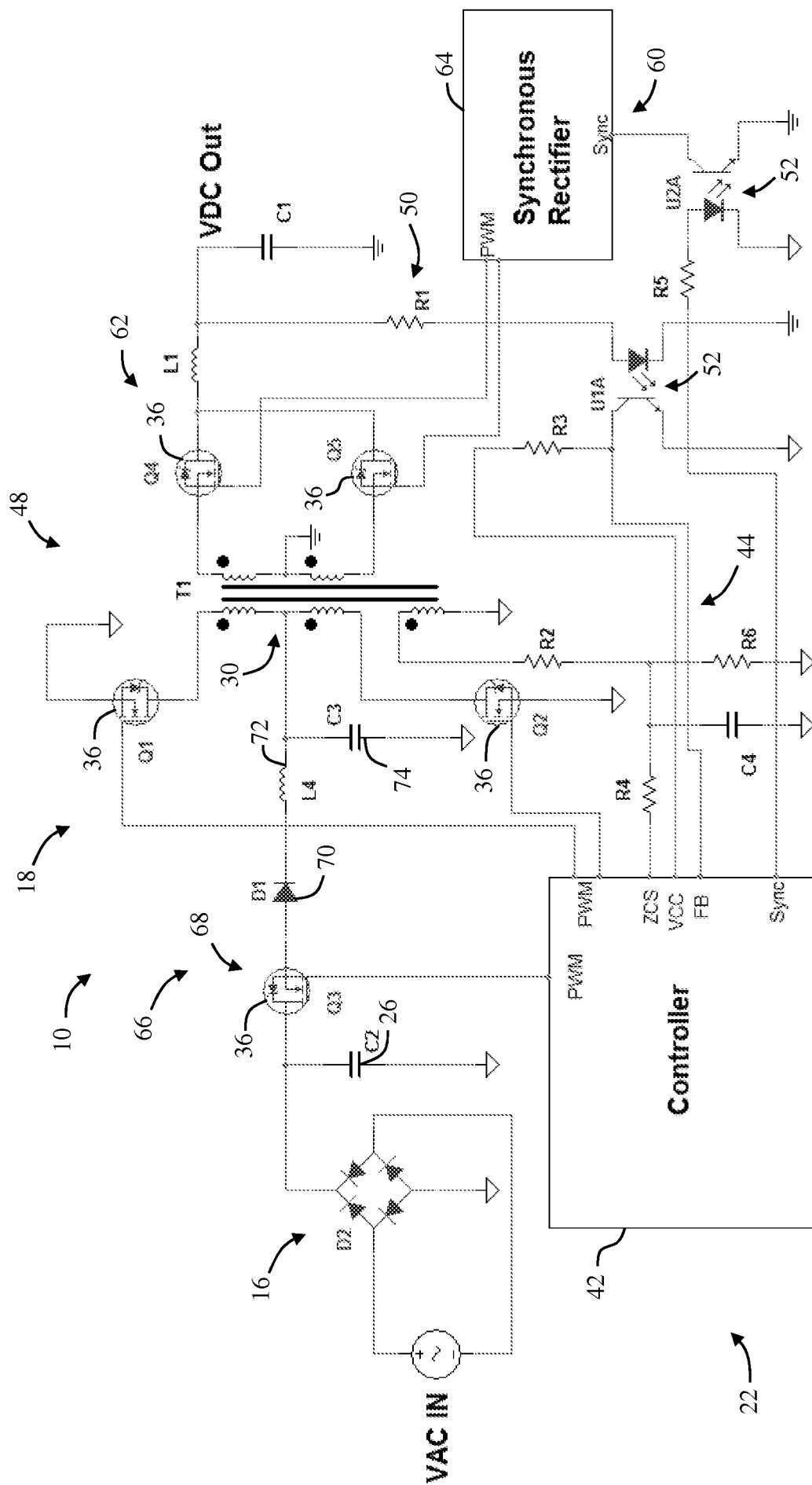
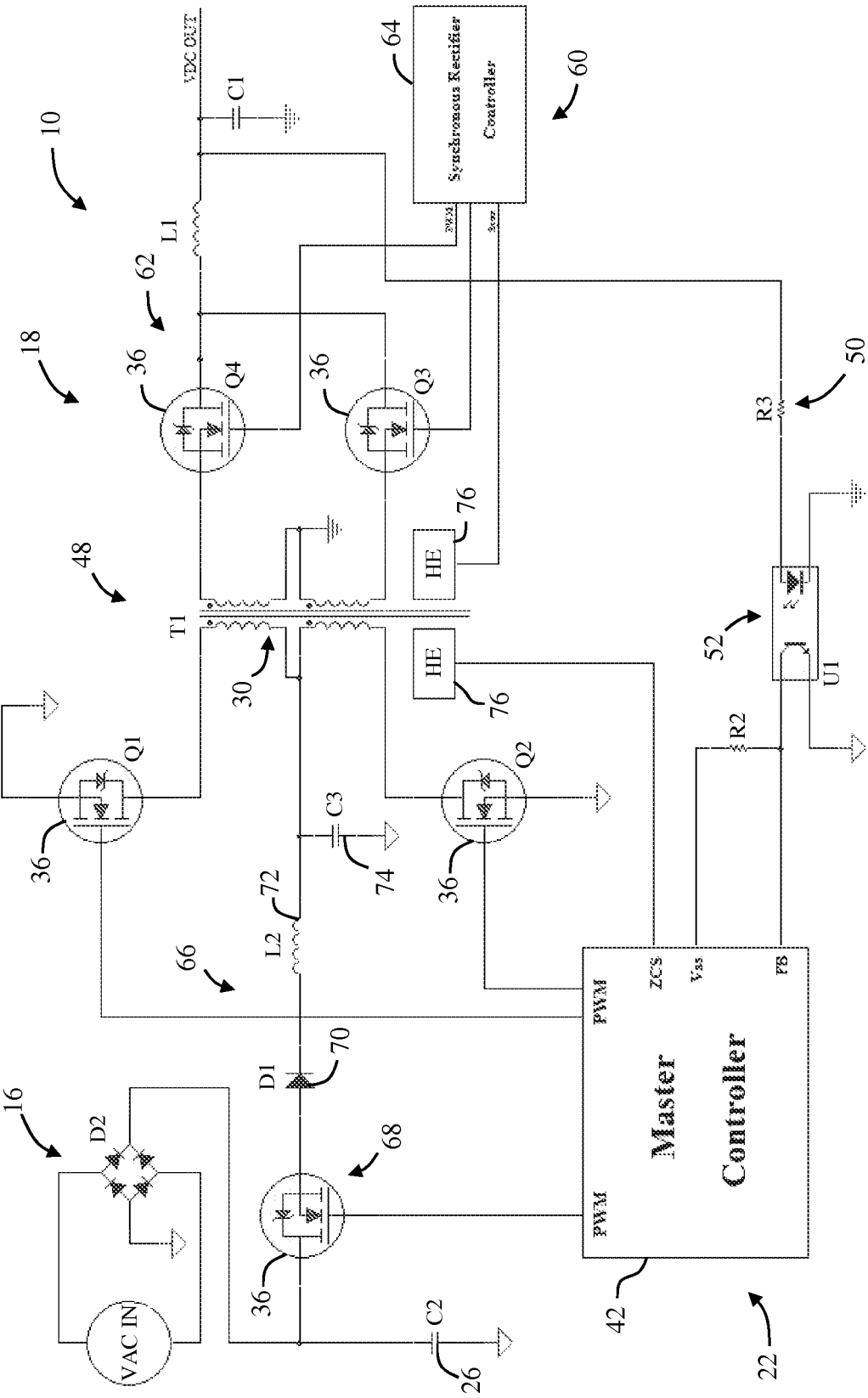


FIG. 12



Synchronous Modified Push-Pull Converter With Quasi-Resonant Front End and Hall Effect Sensors

FIG. 13

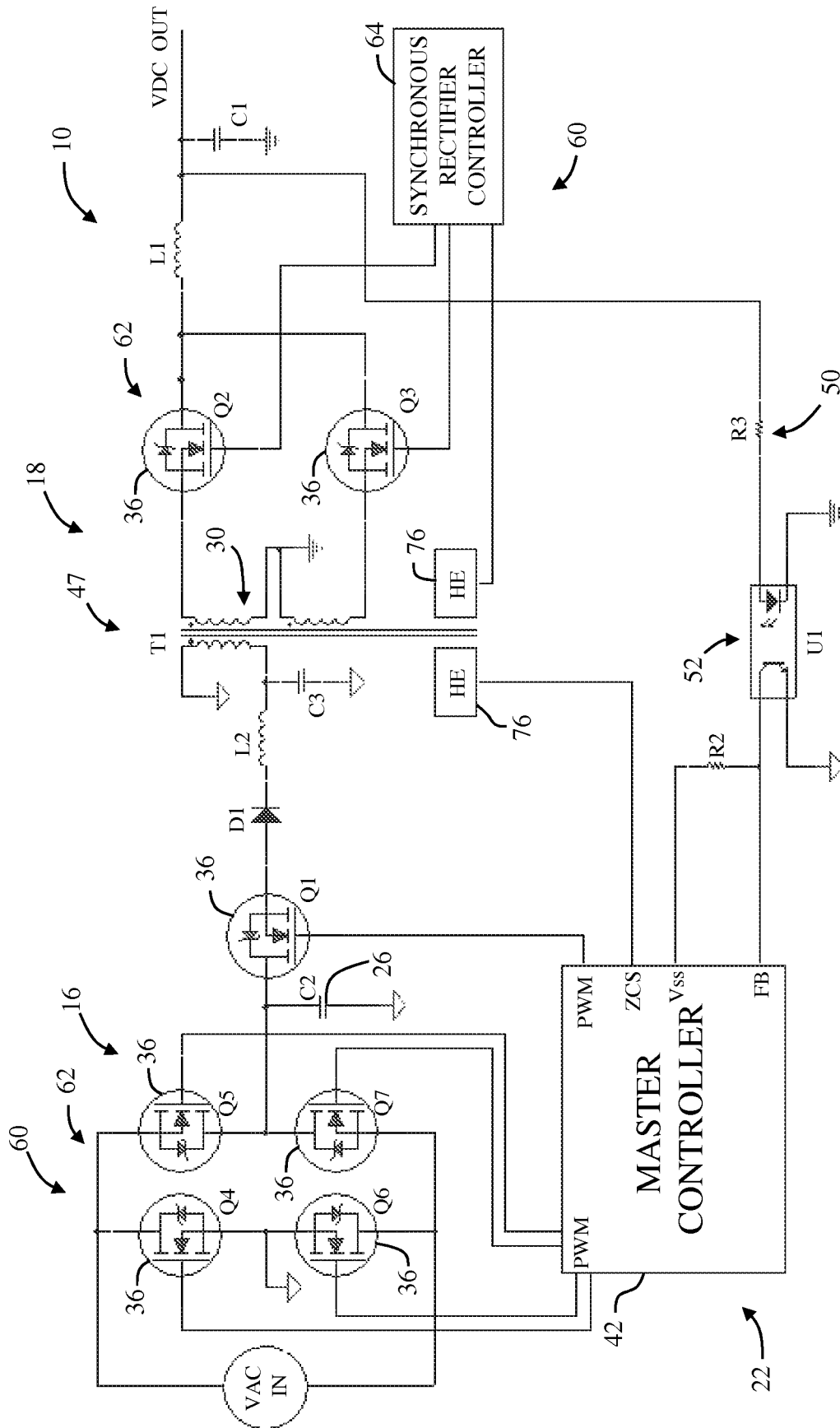


FIG. 14

Synchronous Modified Buck Converter With Synchronous Rectification on Transformer Primary

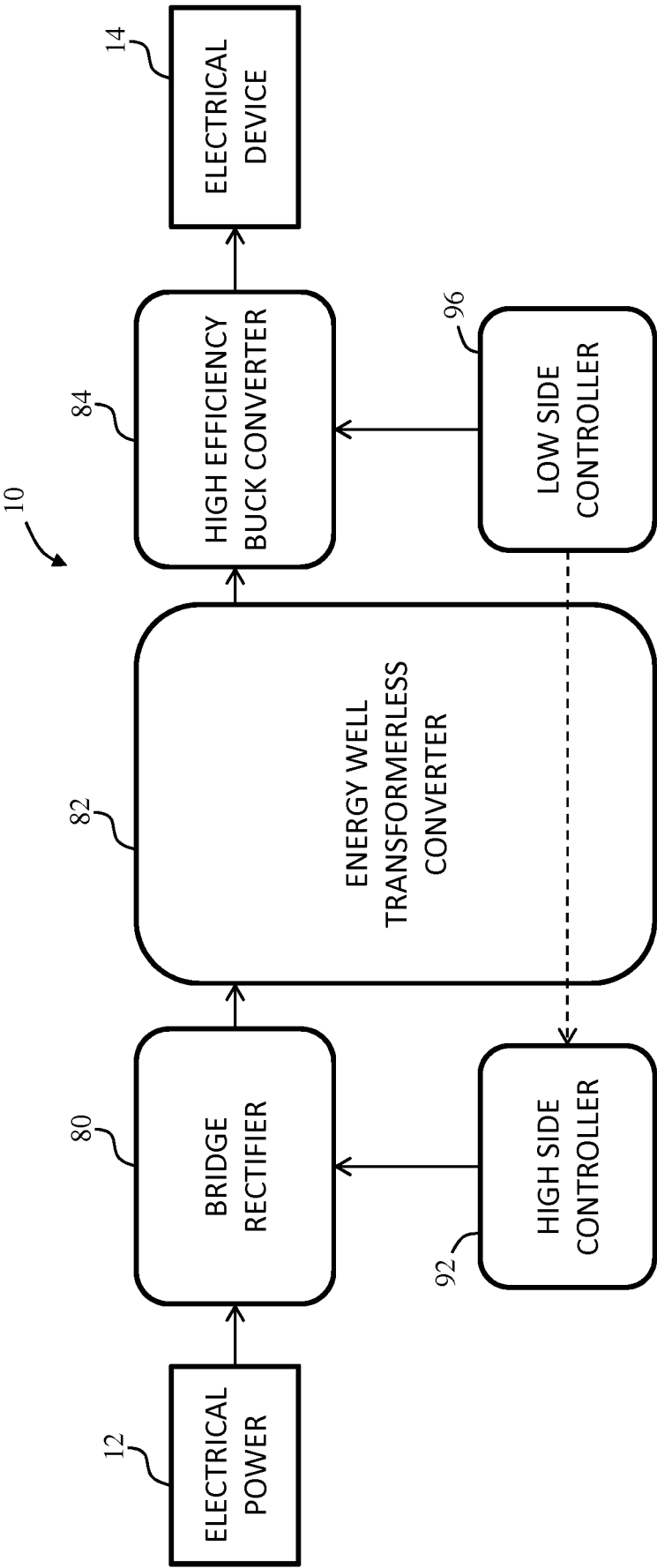


FIG. 15

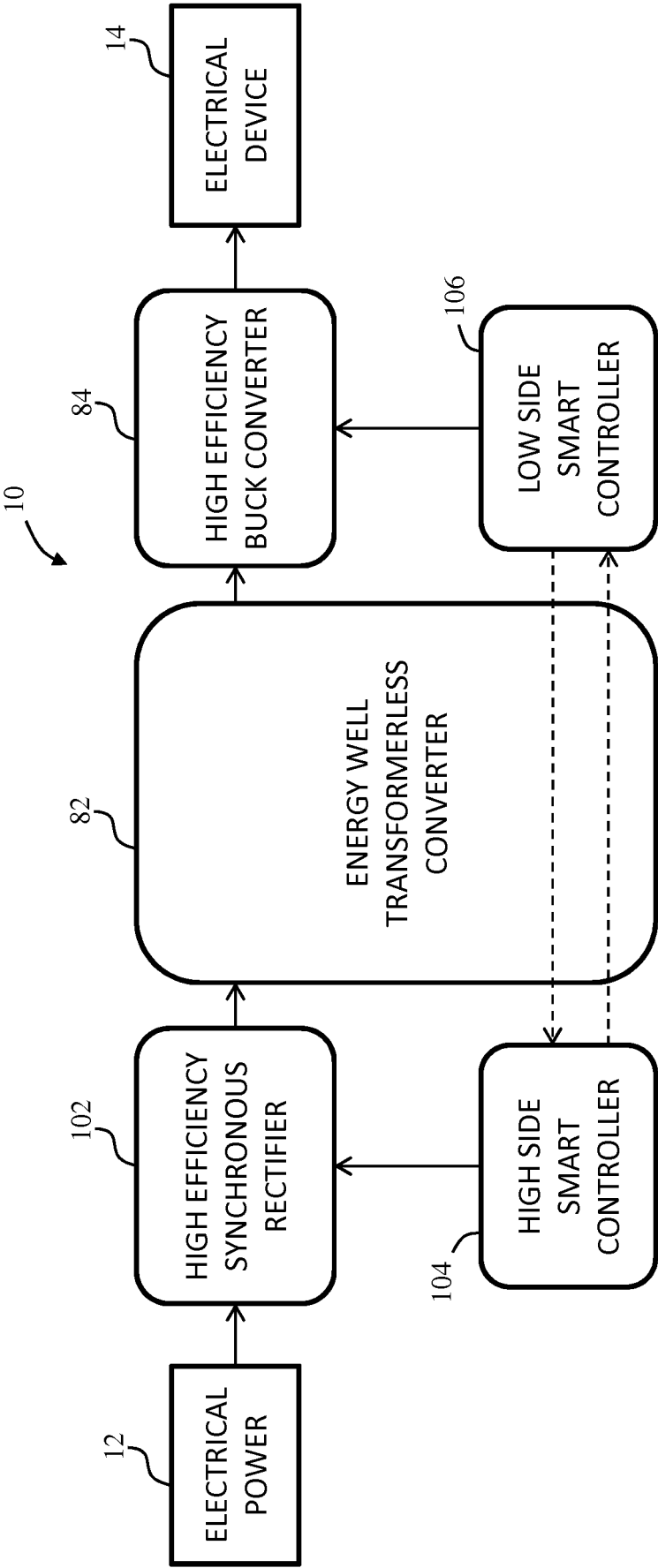


FIG. 16

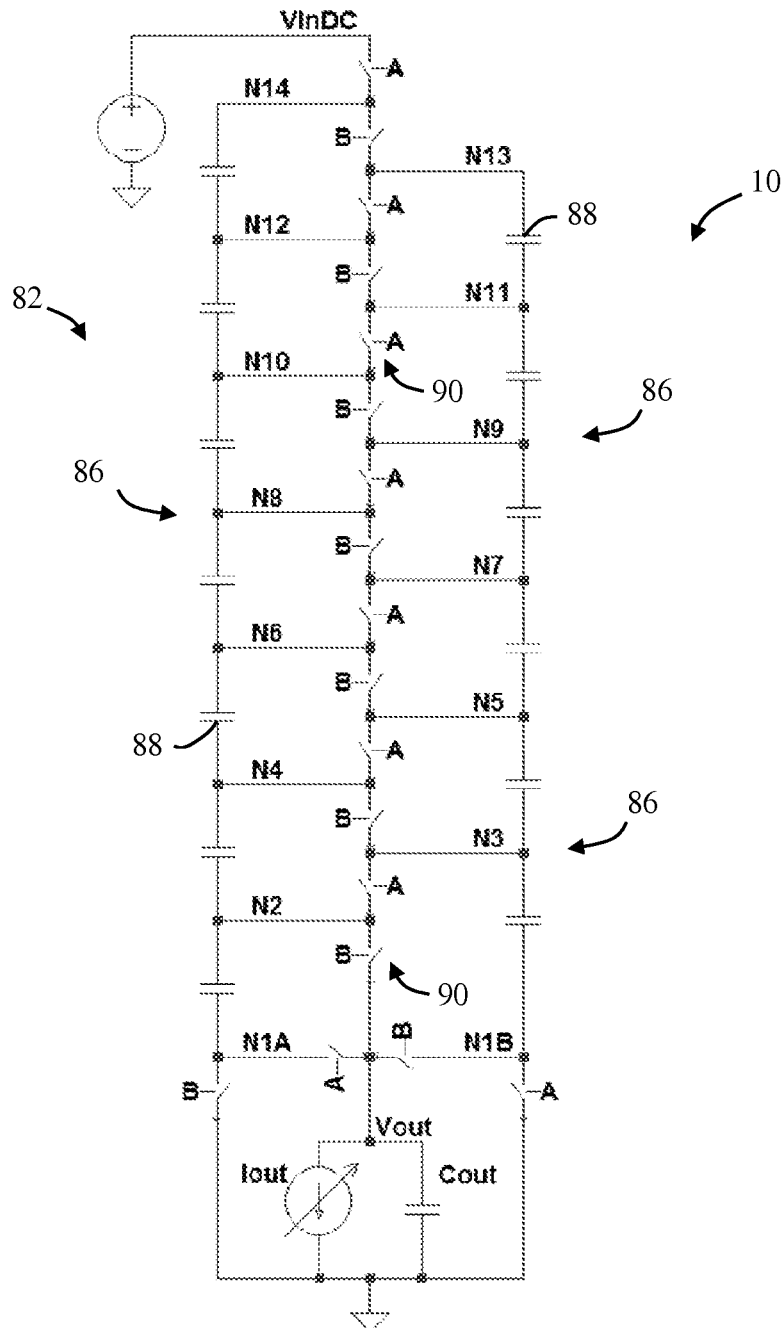
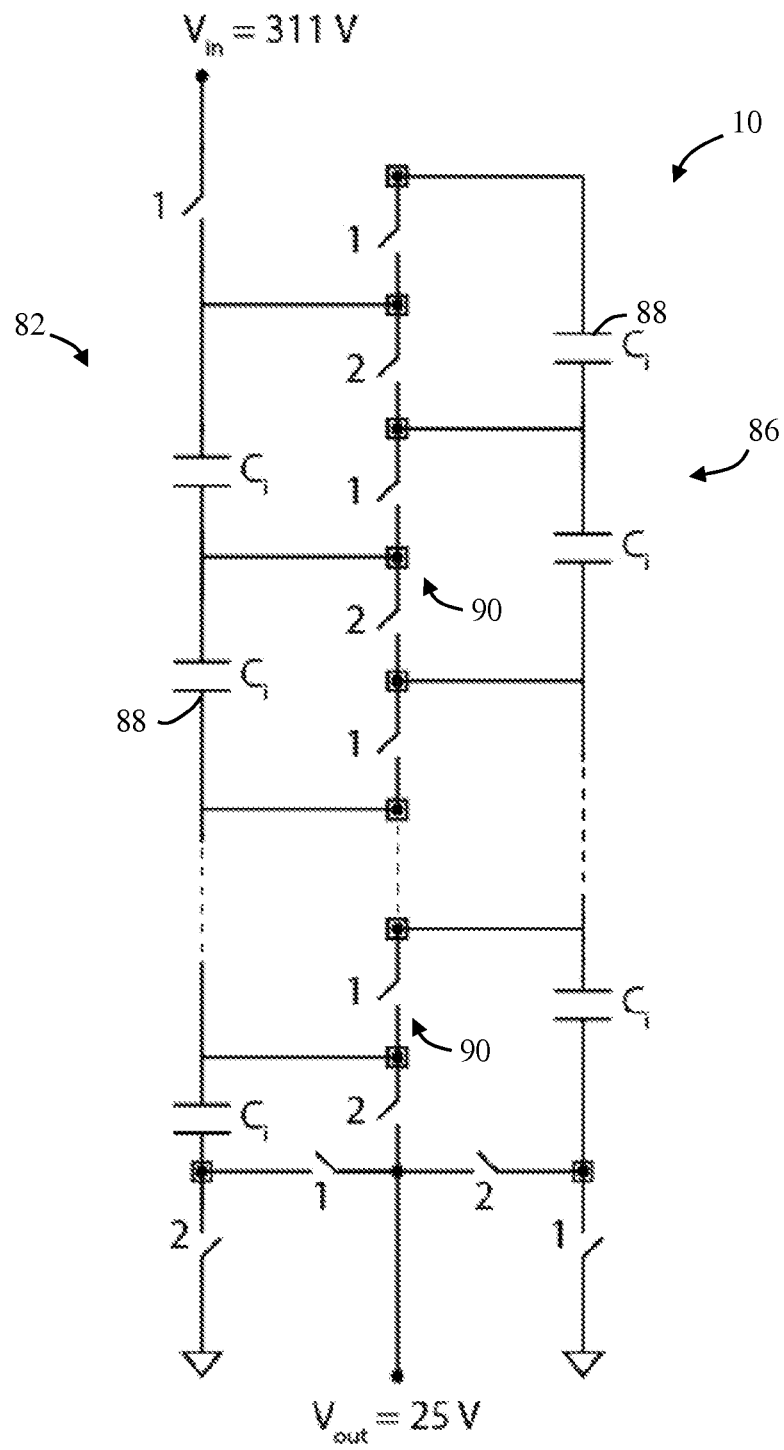


FIG. 17

**FIG. 18**

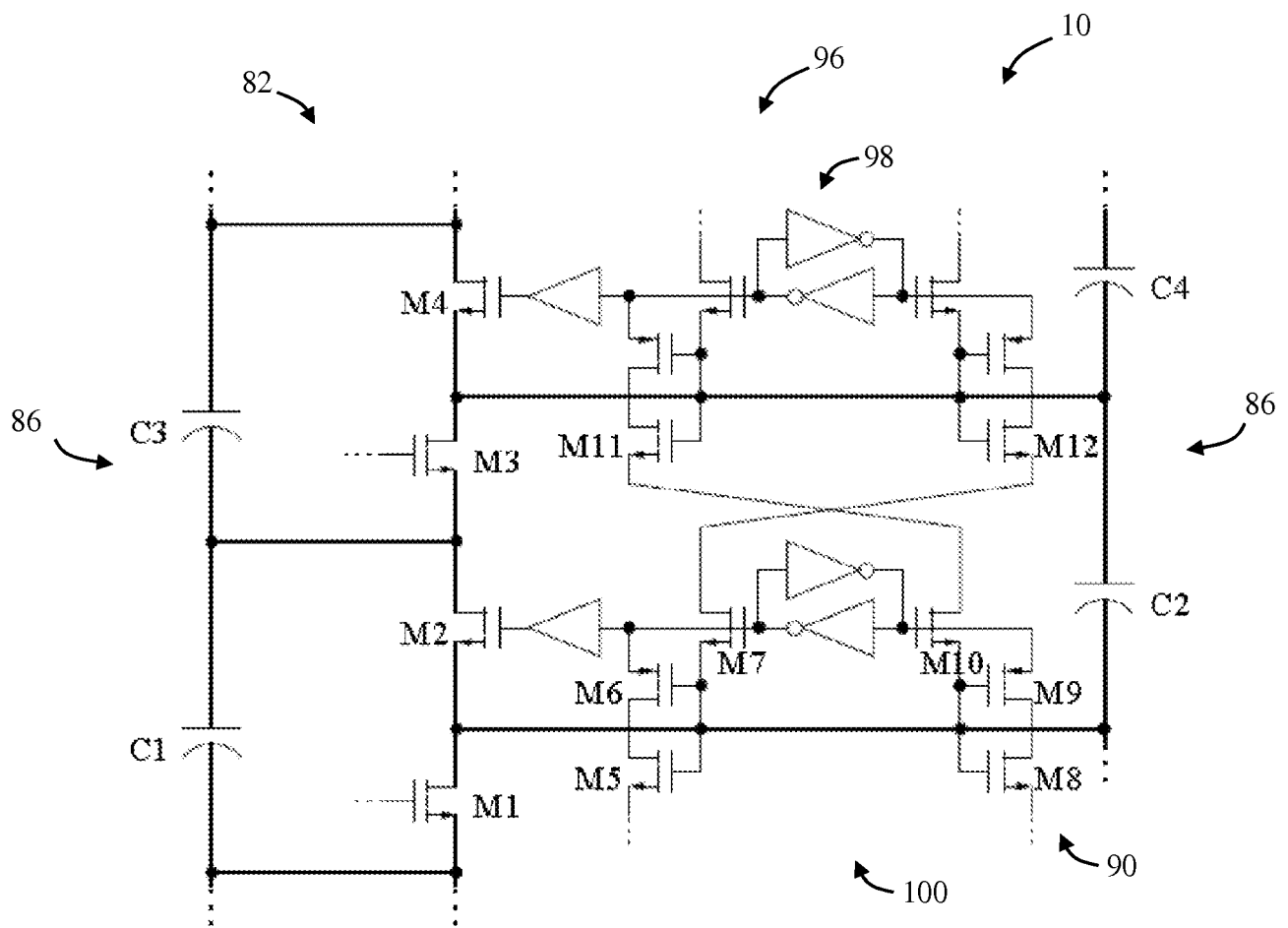


FIG. 19

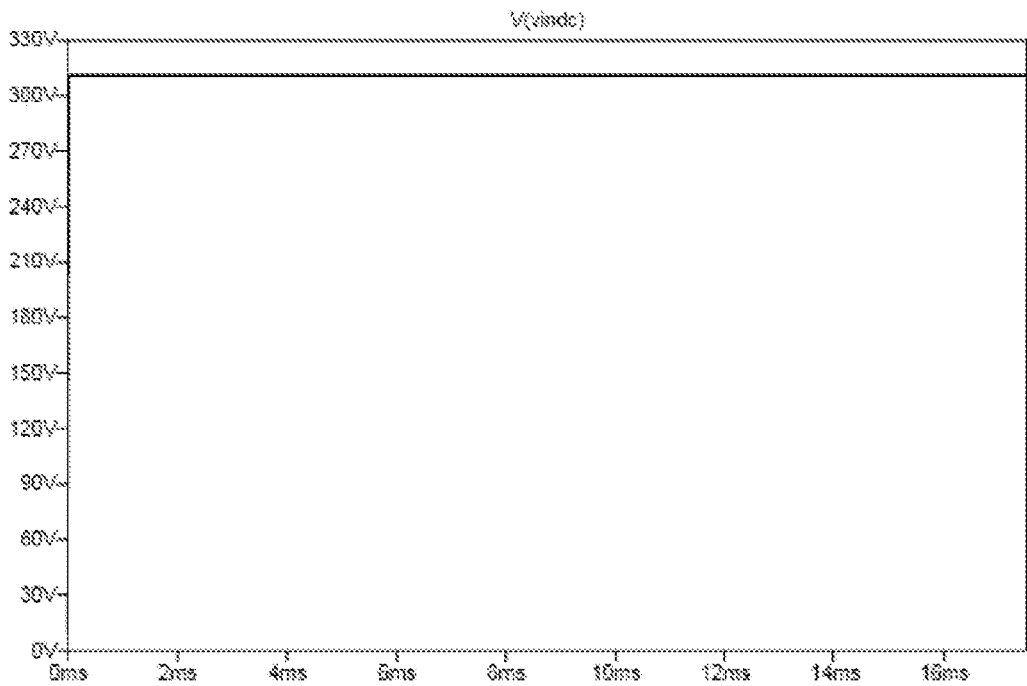


FIG. 20

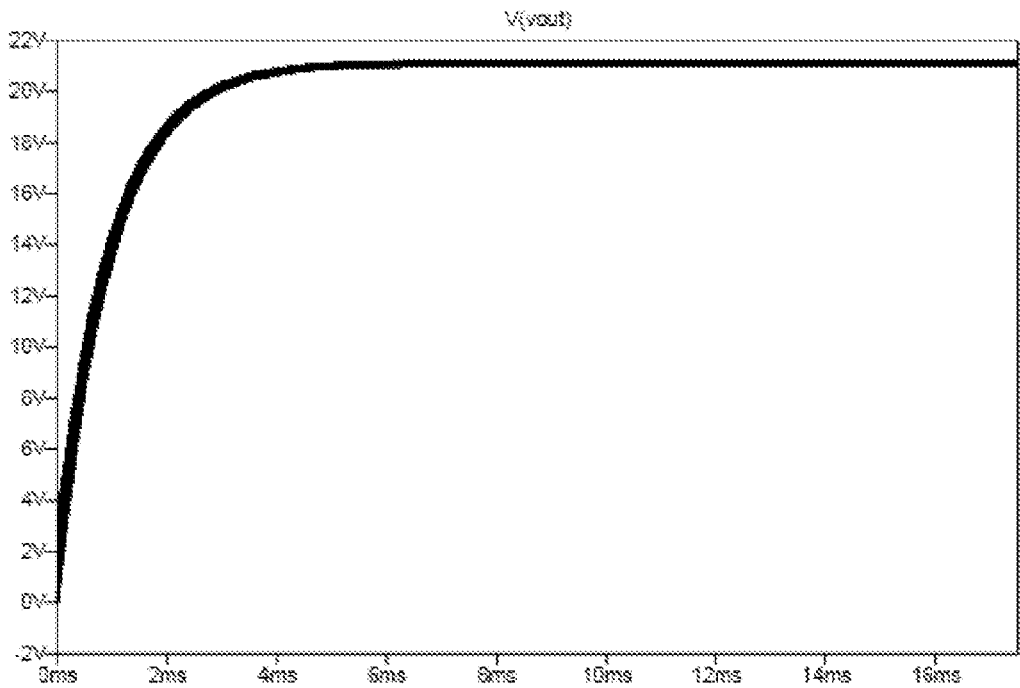
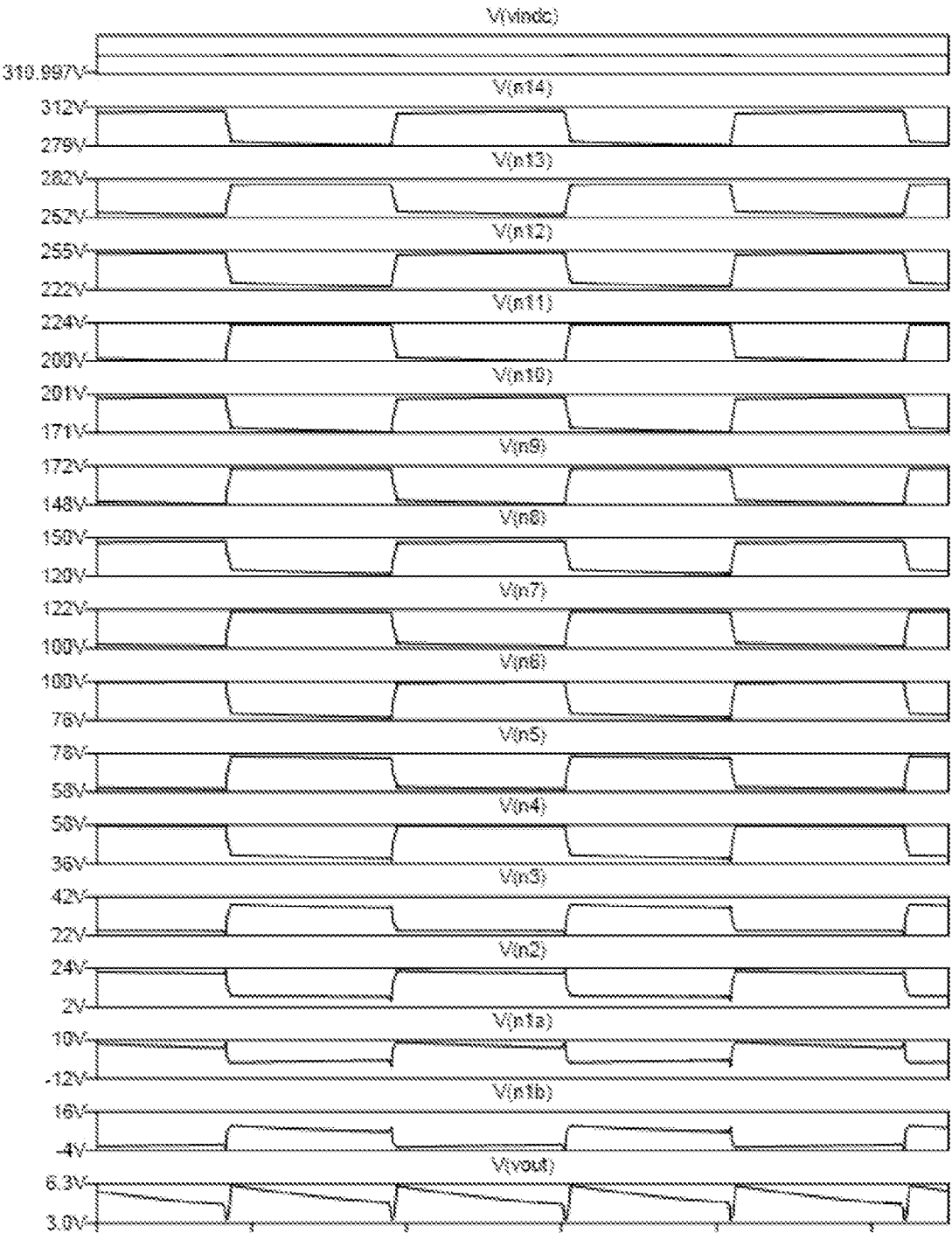
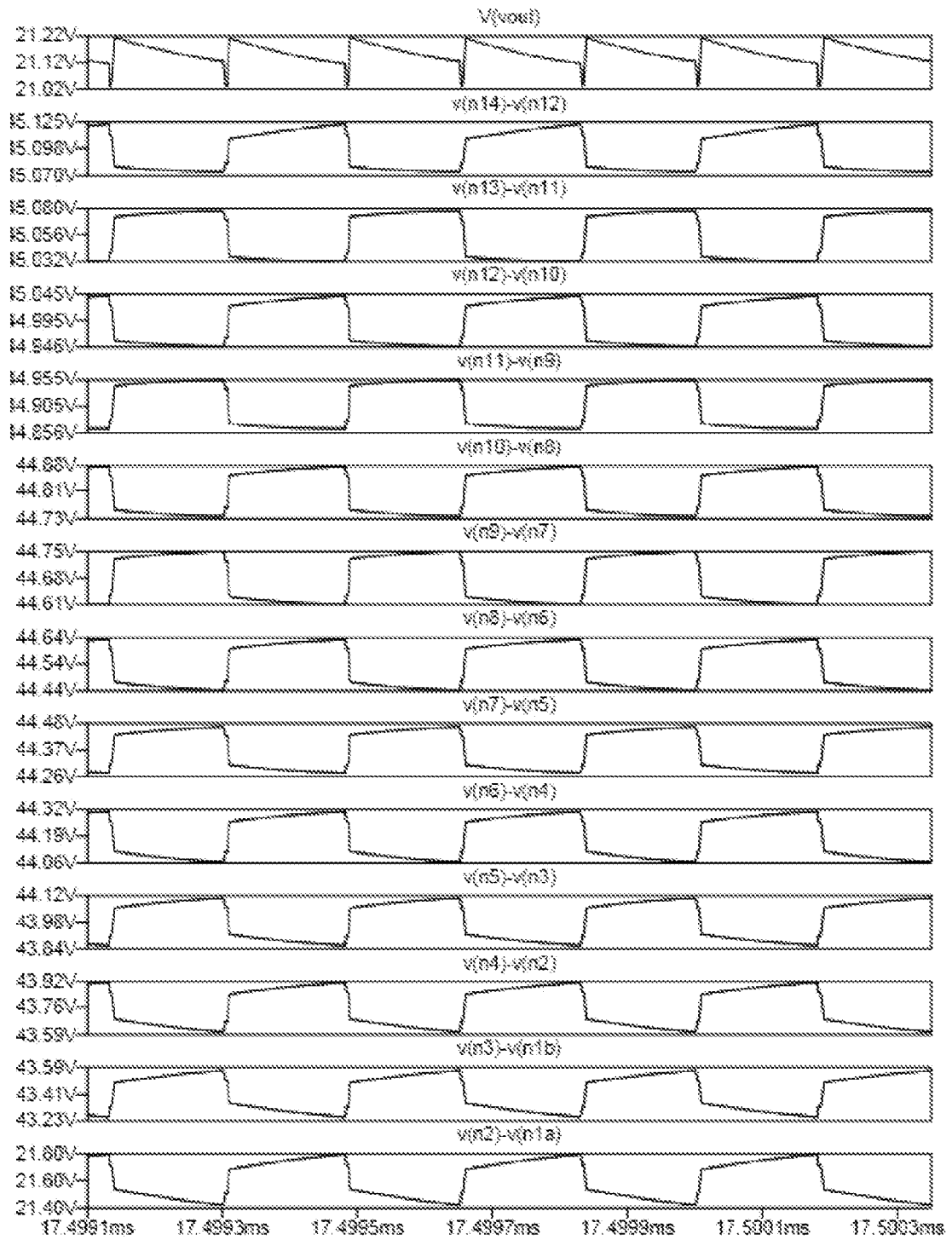


FIG. 21



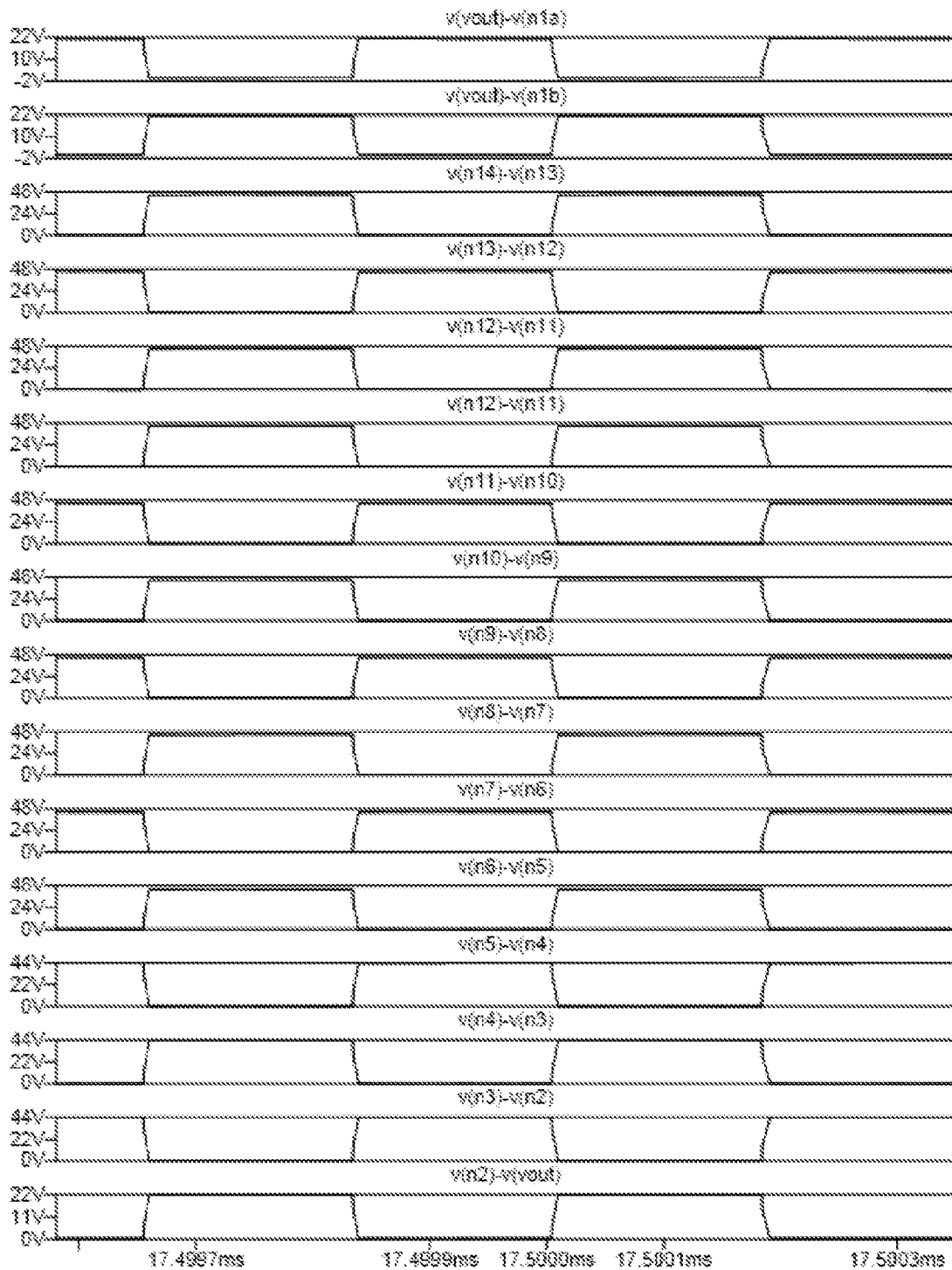
Voltage Plot At Each Capacitor

FIG. 22



Voltage Plot Across Each Capacitor

FIG. 23



Voltage Plot Across Each Switch

FIG. 24

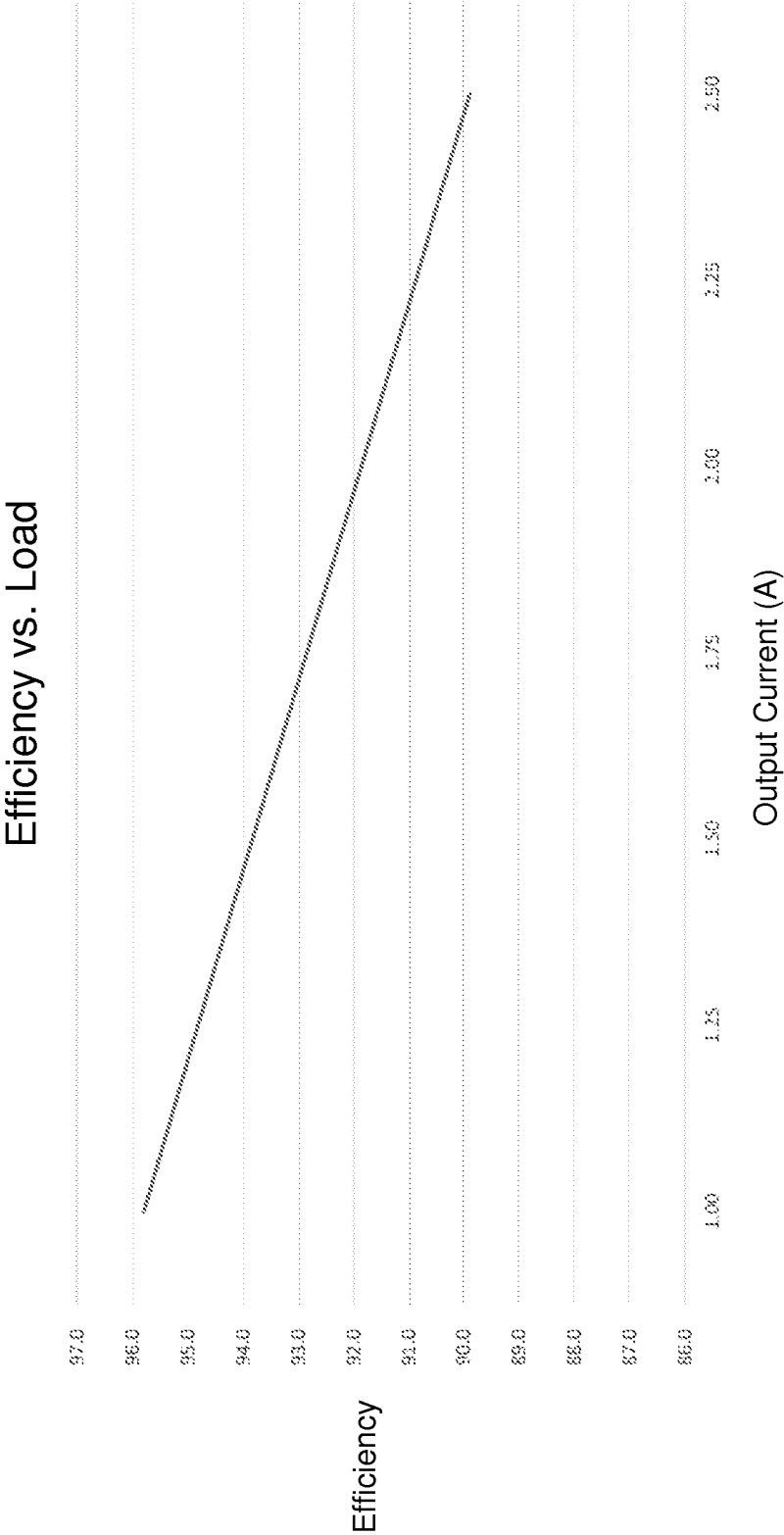


FIG. 25

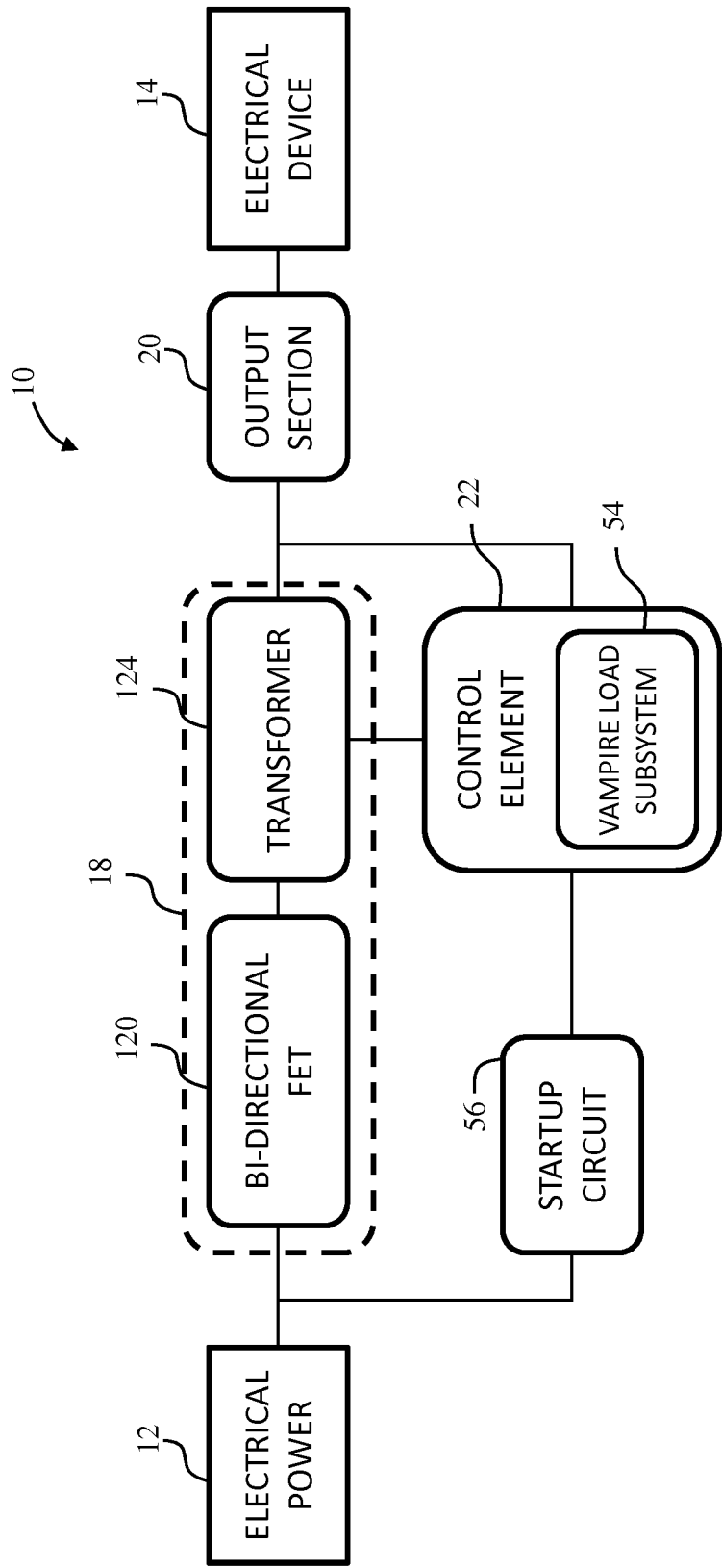
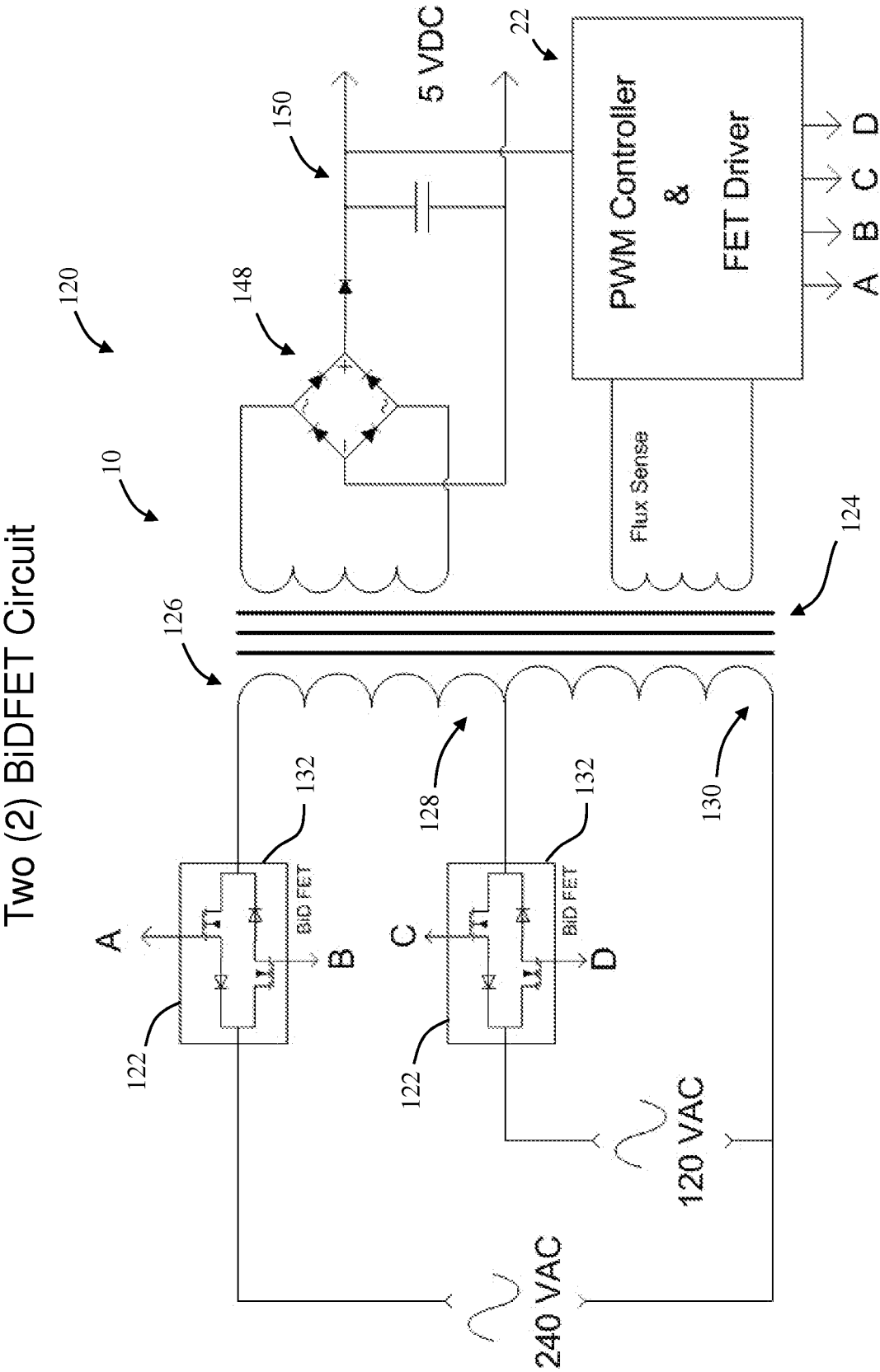


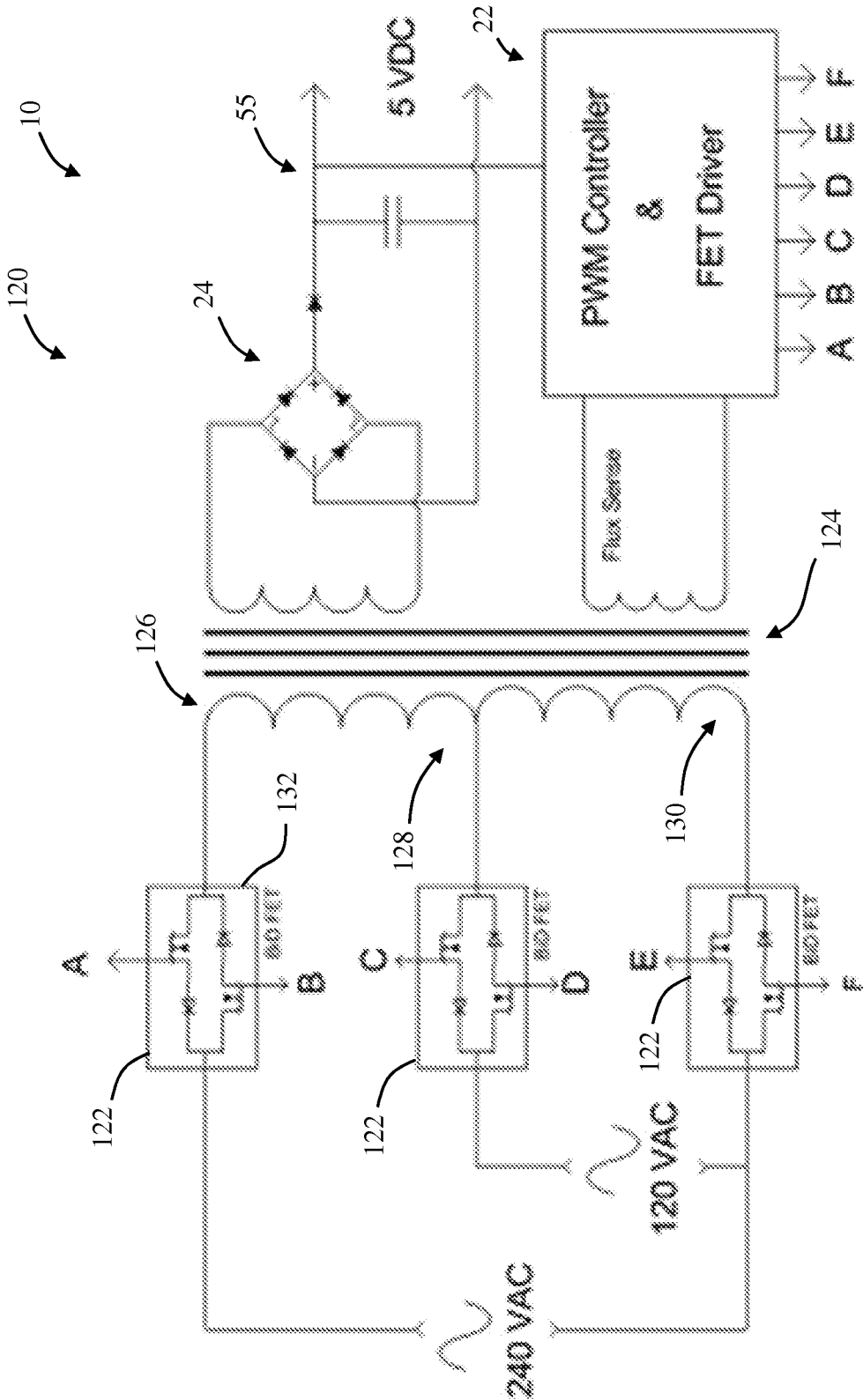
FIG. 26



BiD FET = Bi-Directional
Field Effect Transistor

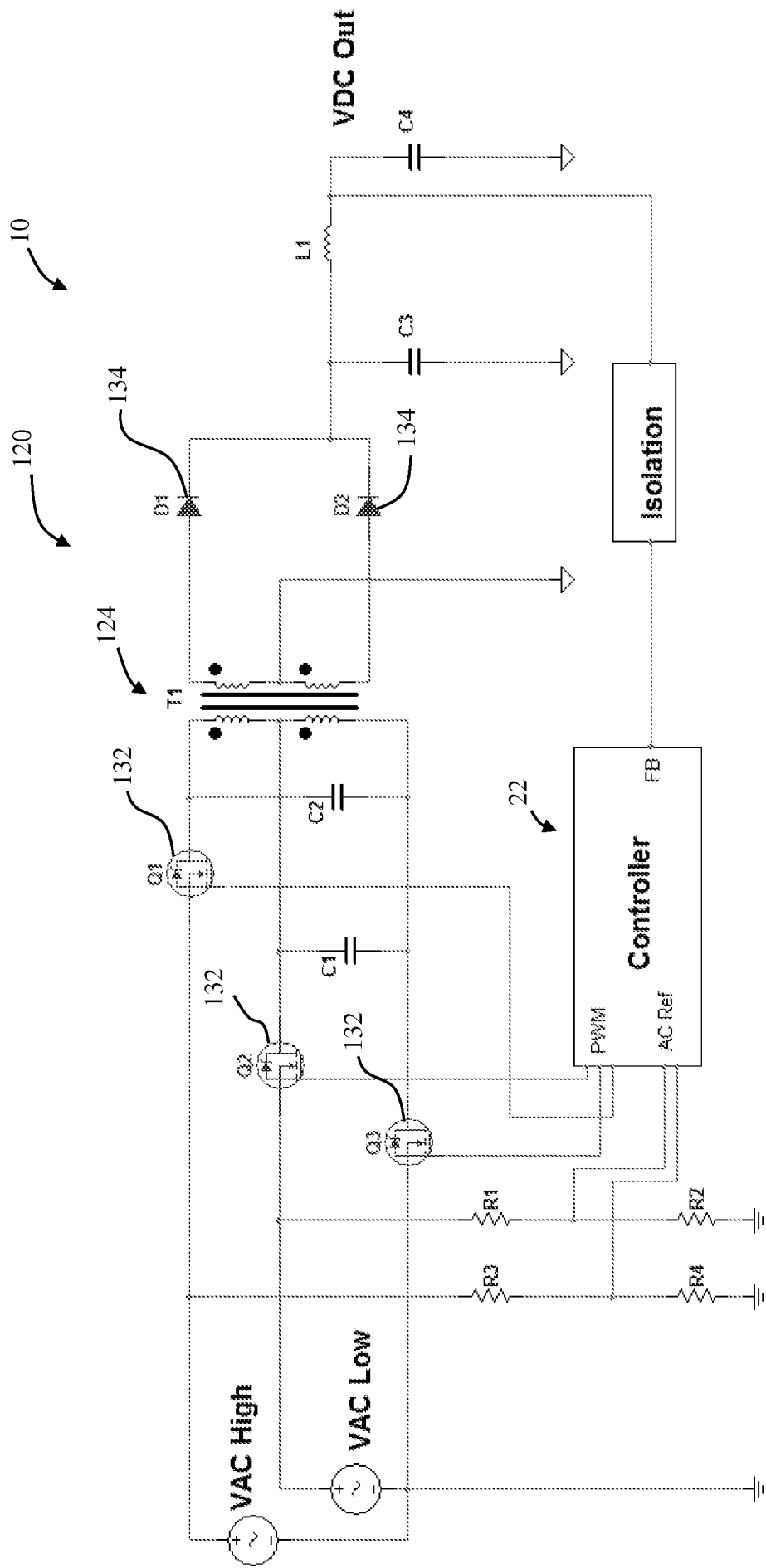
FIG. 27

Three (3) BiDFET Power Circuitry Diagram



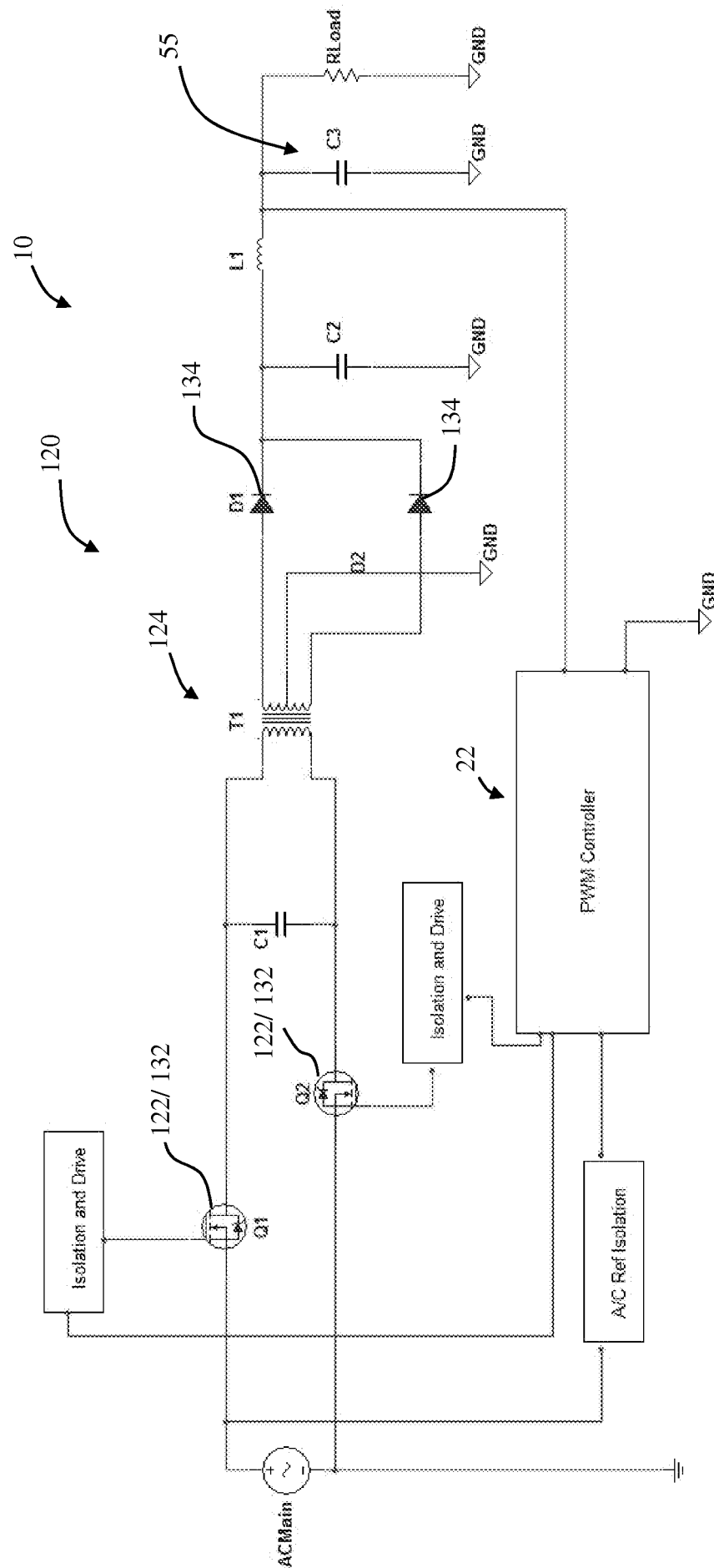
BiD FET = Bi-Directional
Field Effect Transistor

FIG. 28



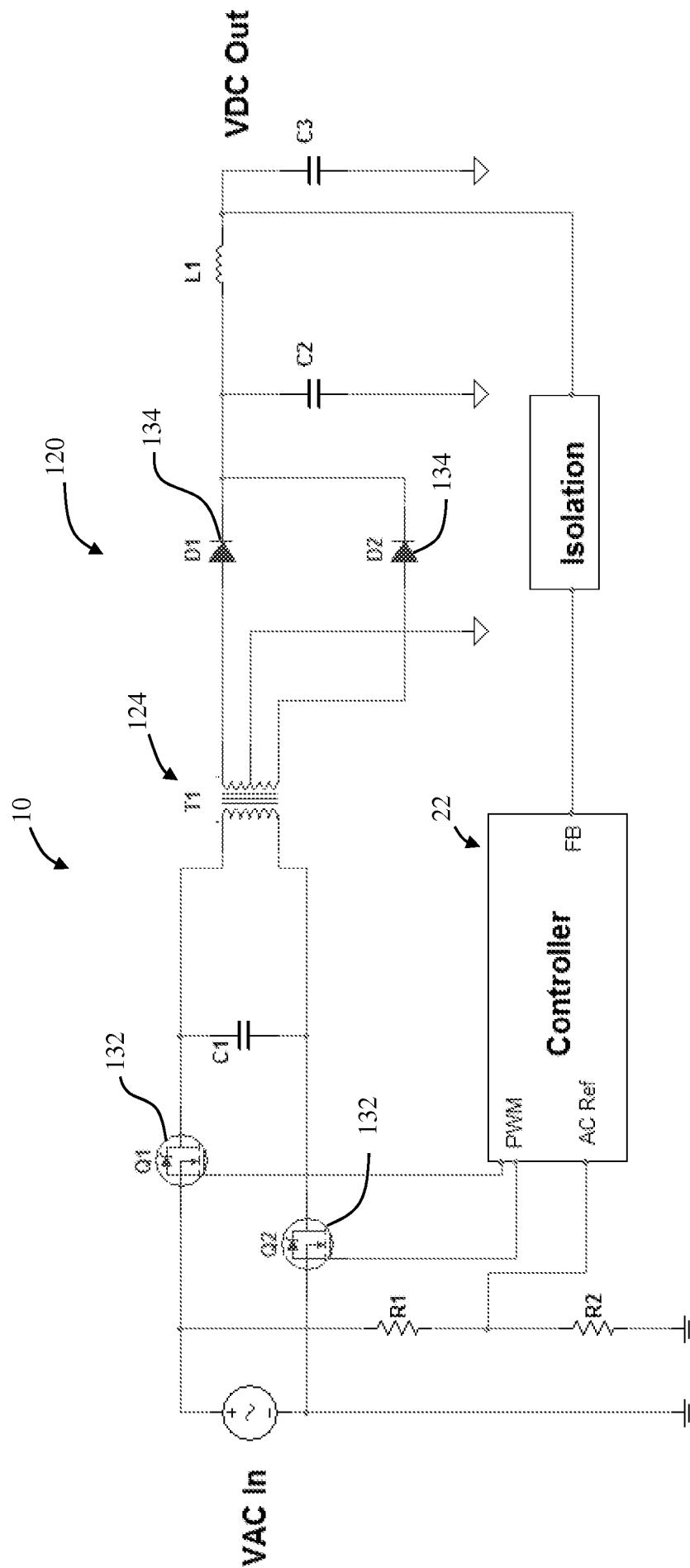
BiDFET Converter With Multi-Tap Transformer

FIG. 29



BiFET with FET Source Connected to AC Main, Asynchronous Secondary, PWM Controller Referenced to Secondary

FIG. 30



Asynchronous BiDFET with FETs Blocking Current from Transformer

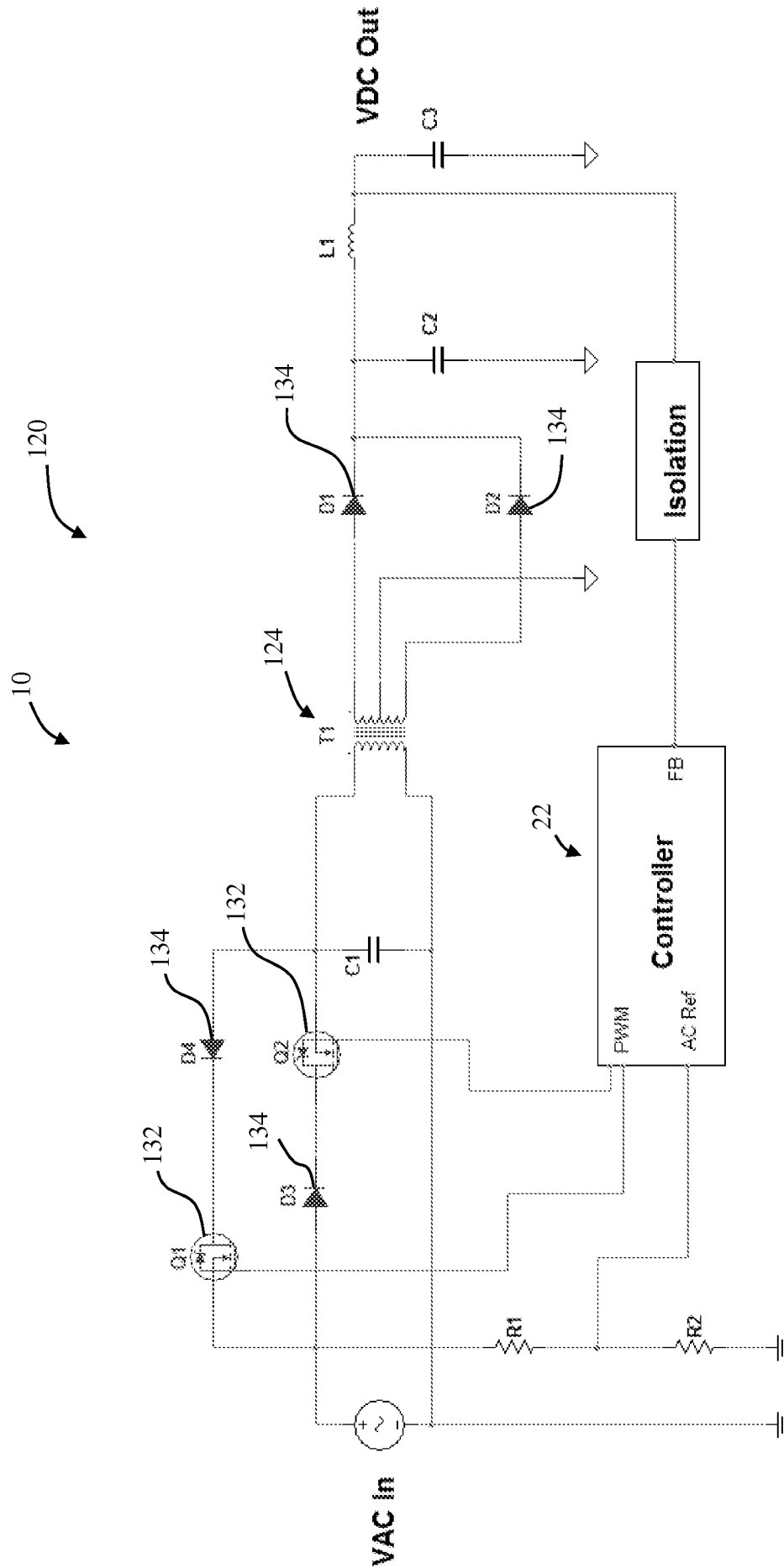
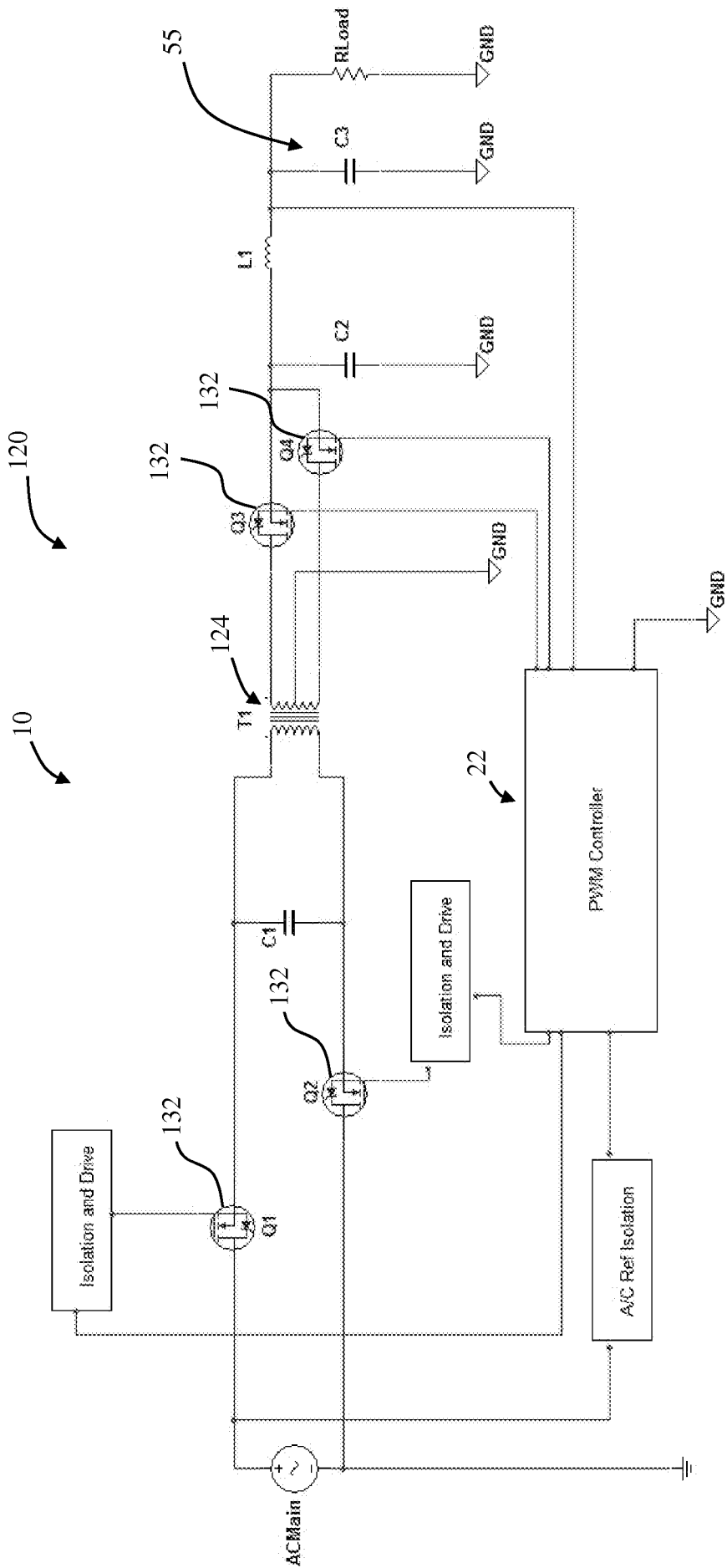


FIG. 32



BiDFET with FET Source Connected to Transformer, Synchronous Secondary, PWM Controller Referenced to Secondary

FIG. 33

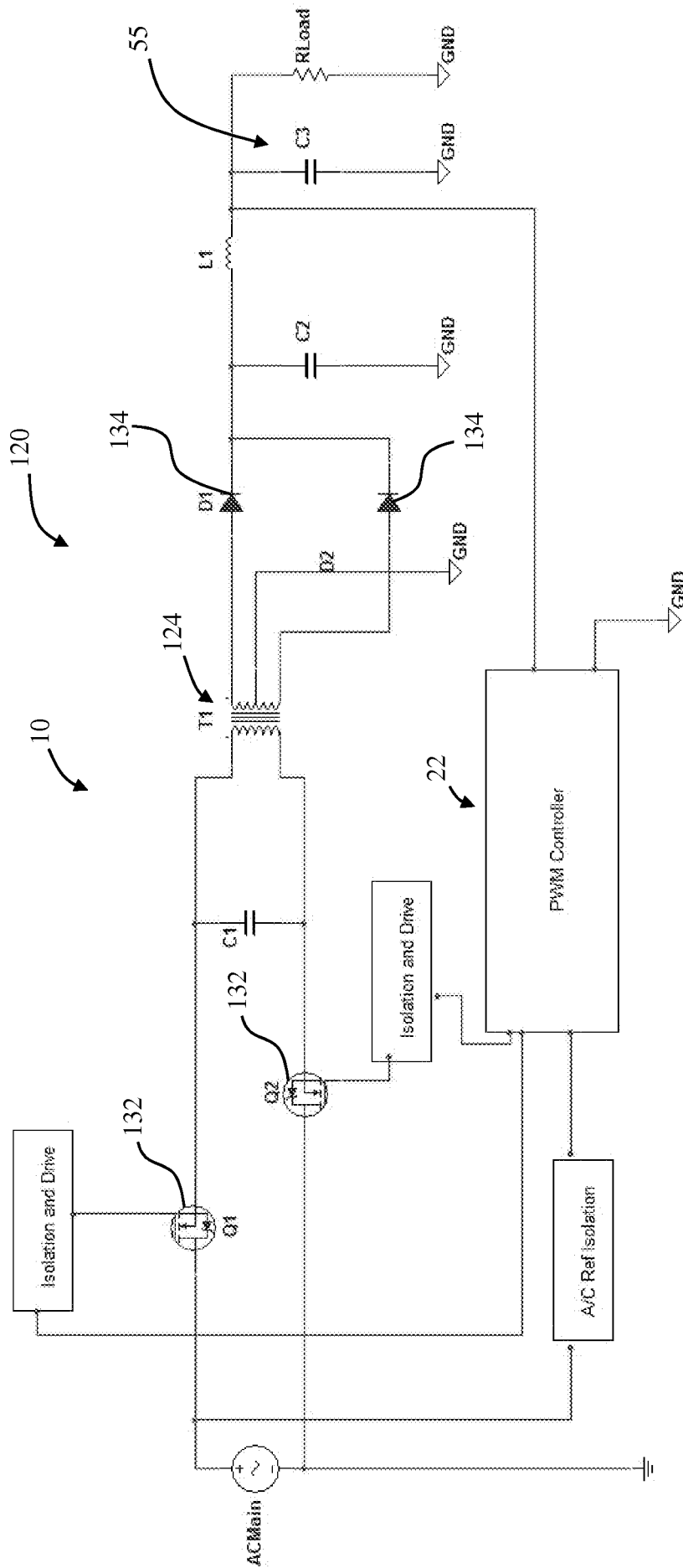
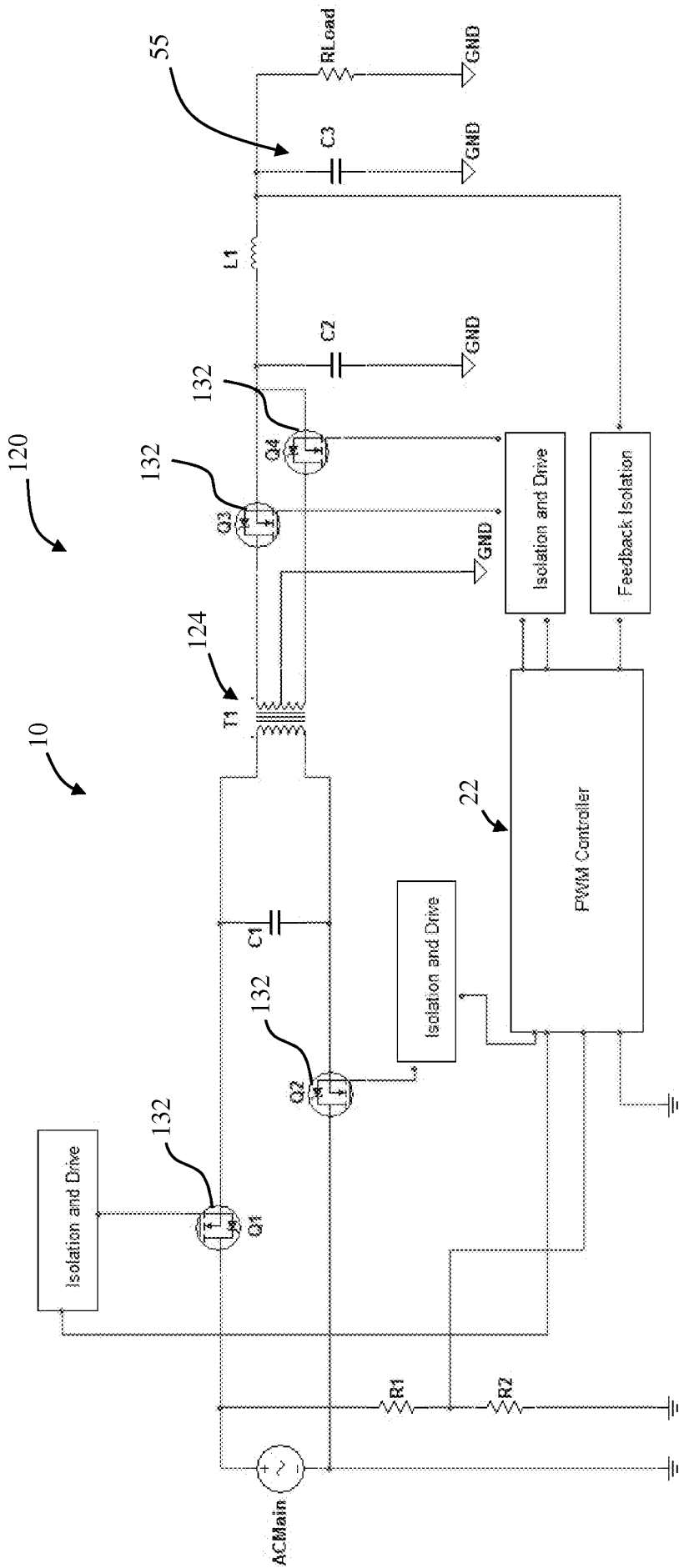
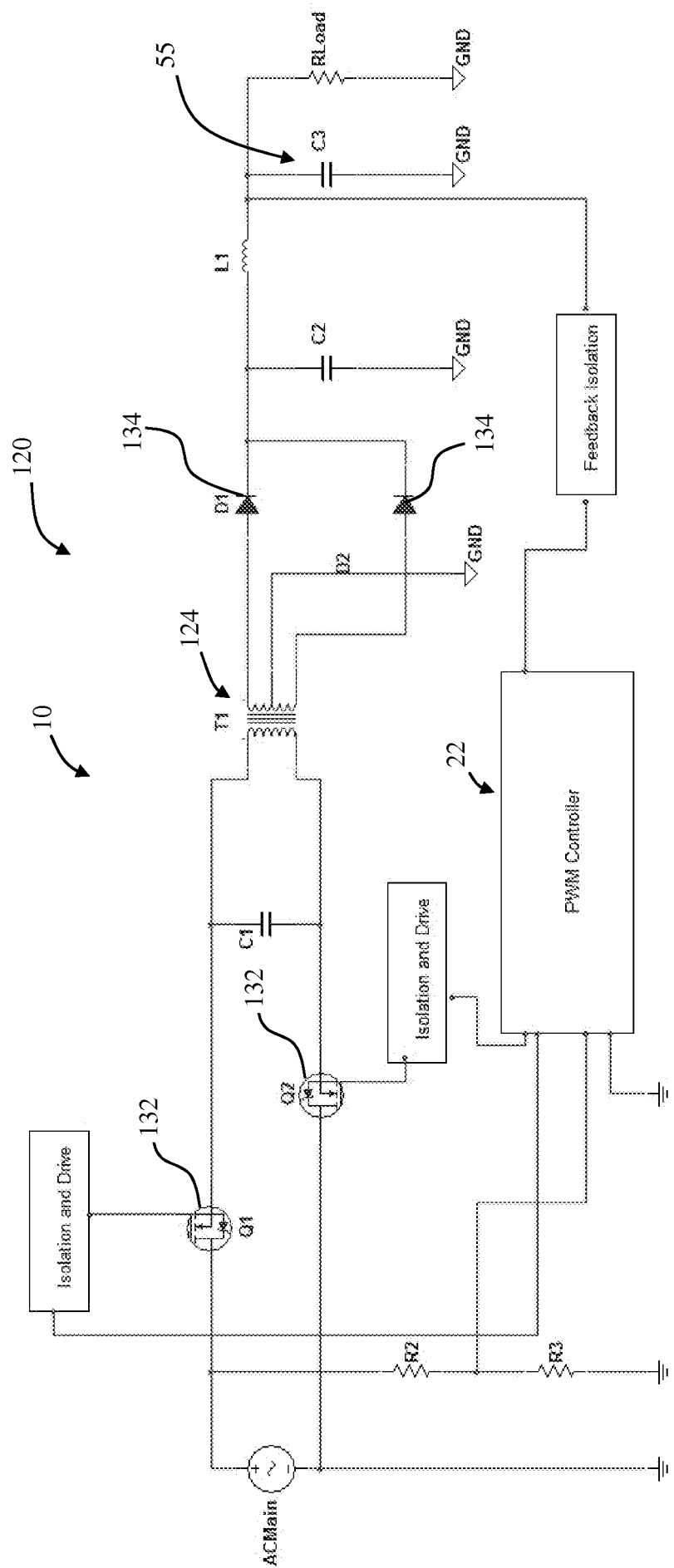


FIG. 34



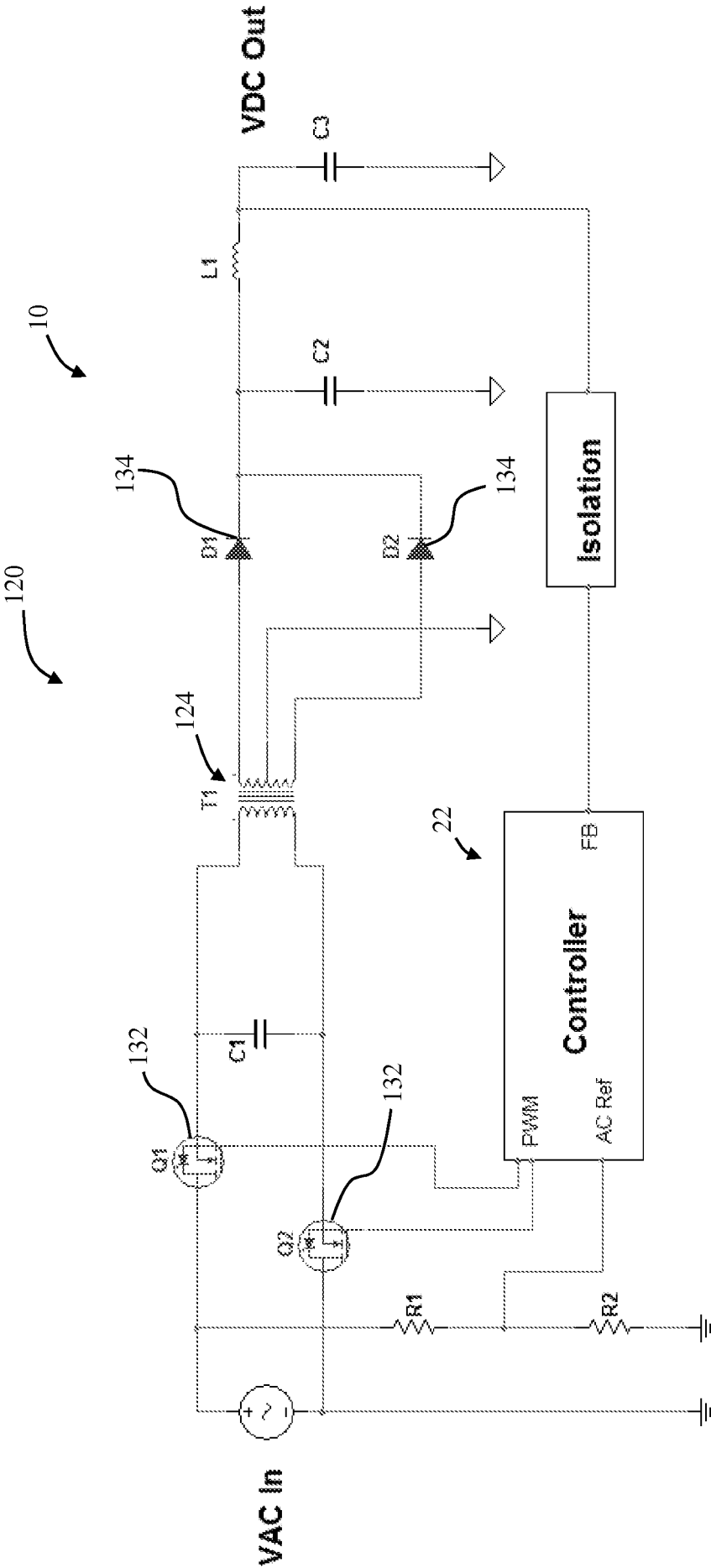
BiFET with FET Source Connected to Transformer, Synchronous Secondary, PWM Controller Referenced to Primary

FIG. 35



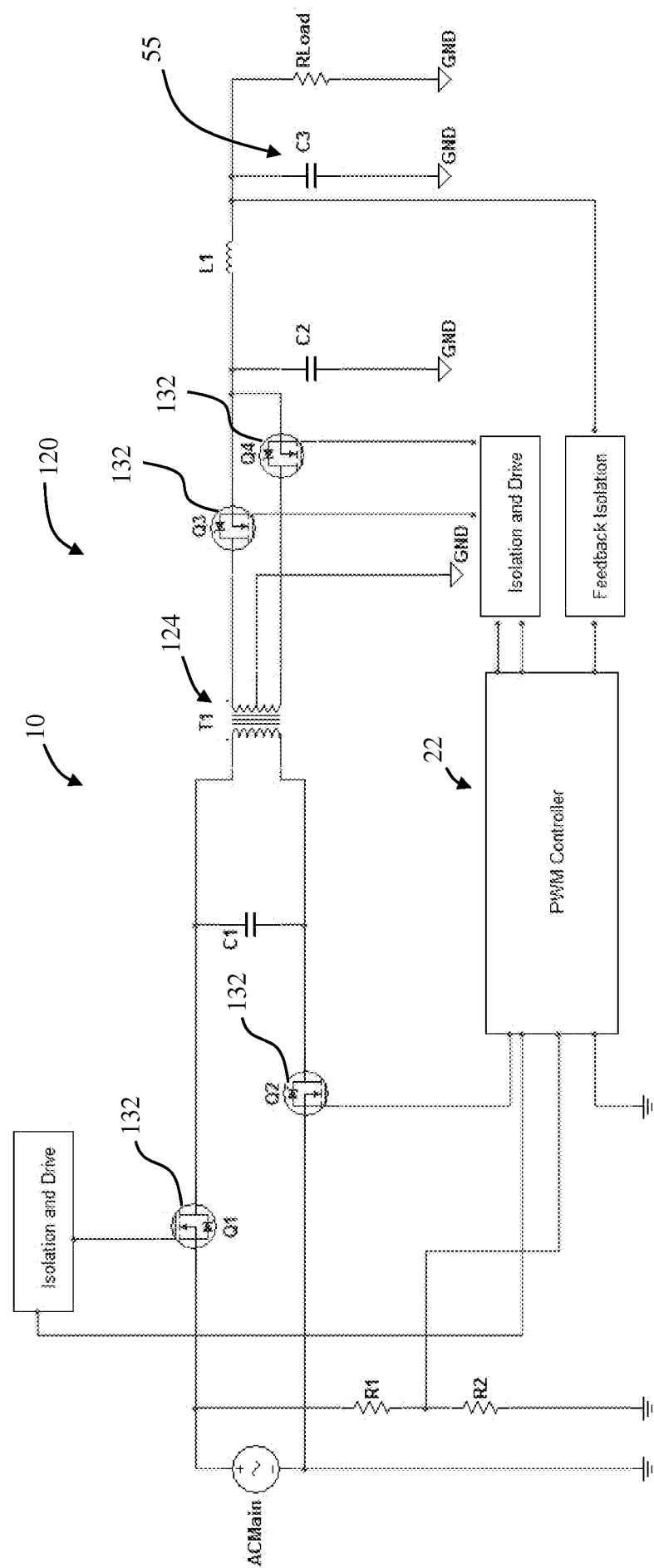
BiDFET with FET Source Connected to Transformer, Asynchronous Secondary, PWM Controller Referenced to Primary

FIG. 36



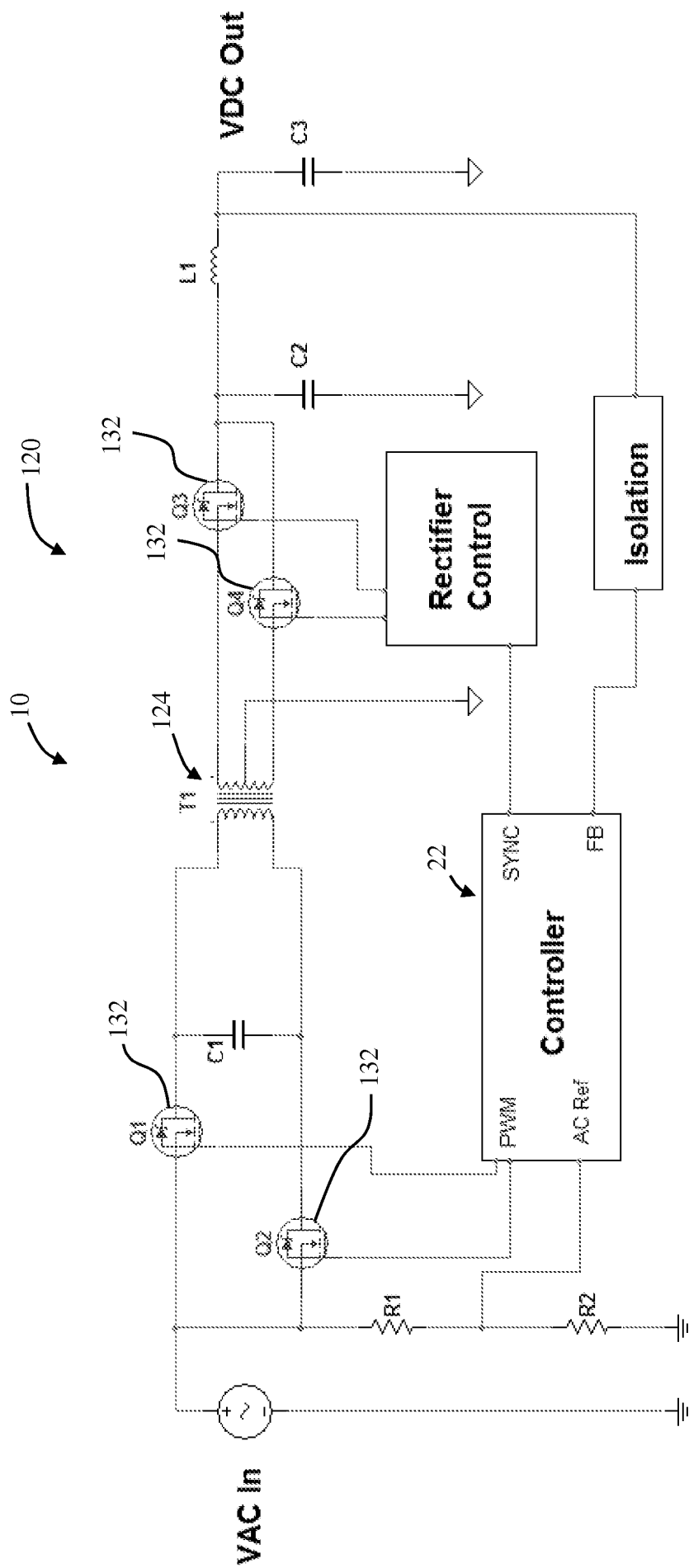
Asynchronous BiDFET with FETs Blocking Current From AC Source

FIG. 37



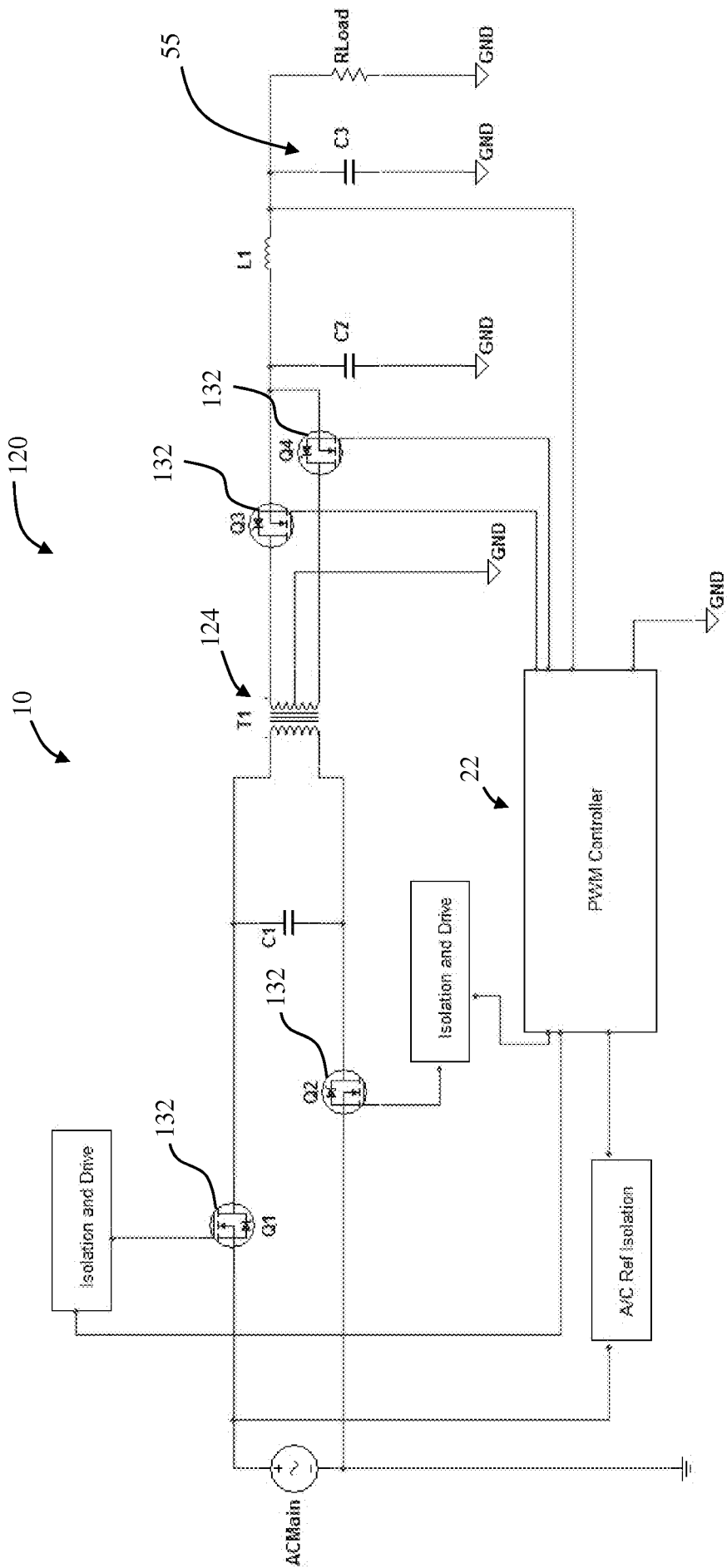
BiDFET with FET Source Connected to AC Main, Synchronous Secondary, PWM Controller Referenced to Primary

FIG. 38



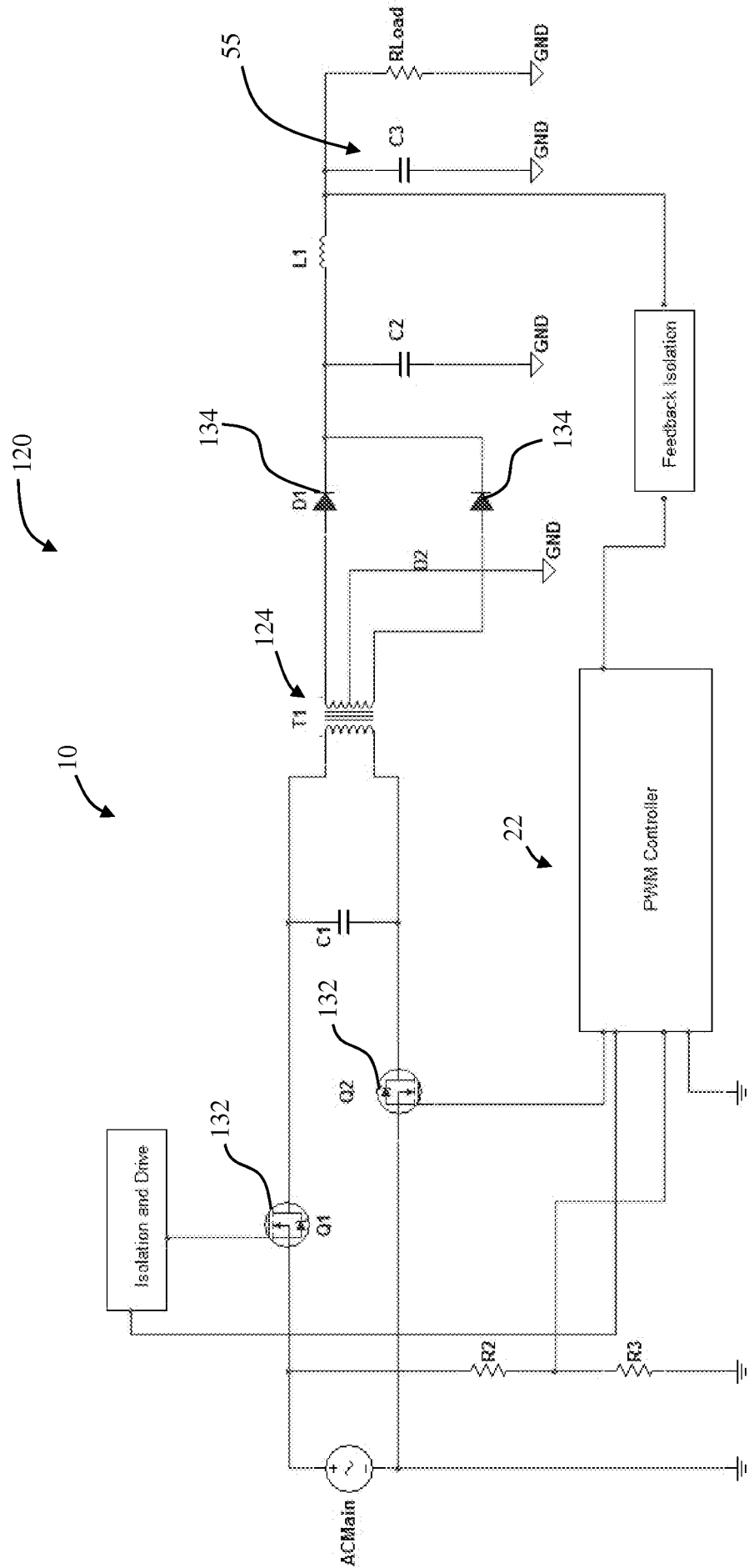
Synchronous BiDFET With FETs Blocking Current From Transformer

FIG. 39



BiDFT with FET Source Connected to AC Main and PWM Controller Referenced to Synchronous Secondary

FIG. 40



BiDFET with FET Source Connected to AC Main, Asynchronous Secondary, PWM Controller Referenced to Primary

FIG. 41

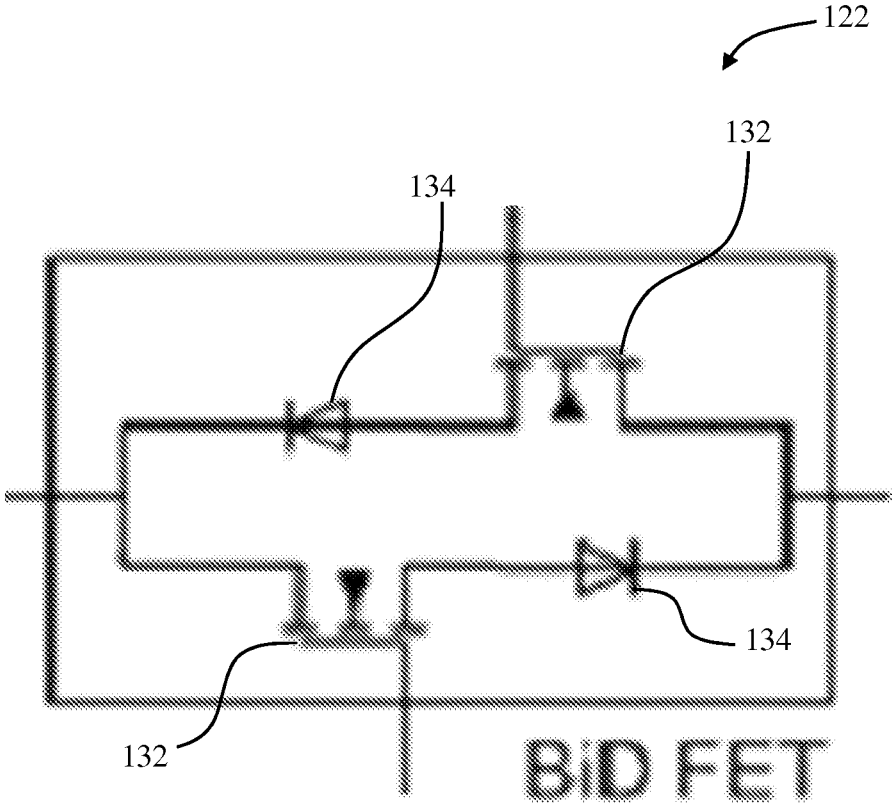


FIG. 42

BiDFET chopped up Sine Wave
Can be evenly “chopped” or unevenly “chopped”

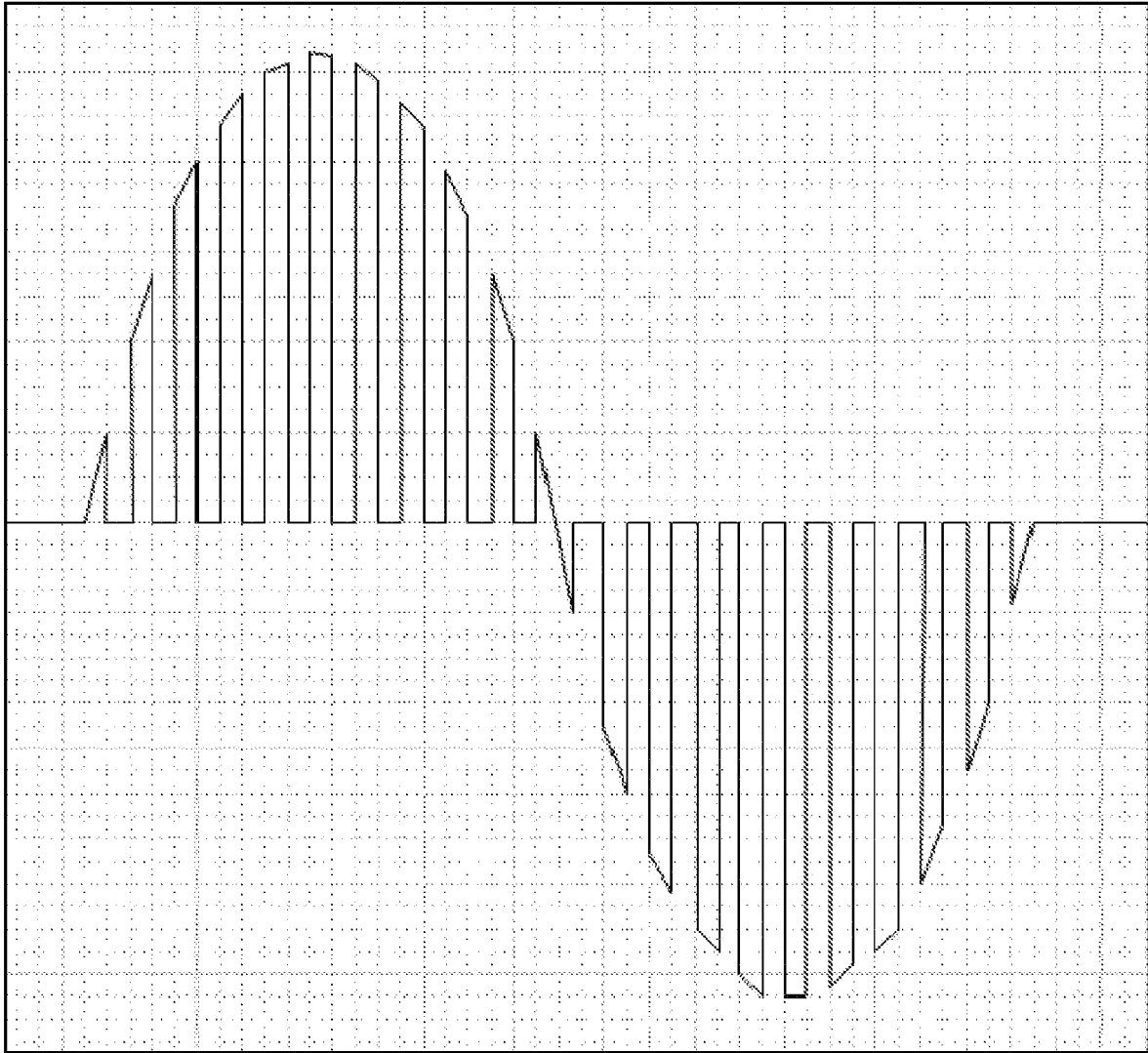


FIG. 43

BiDFET Voltage Plot

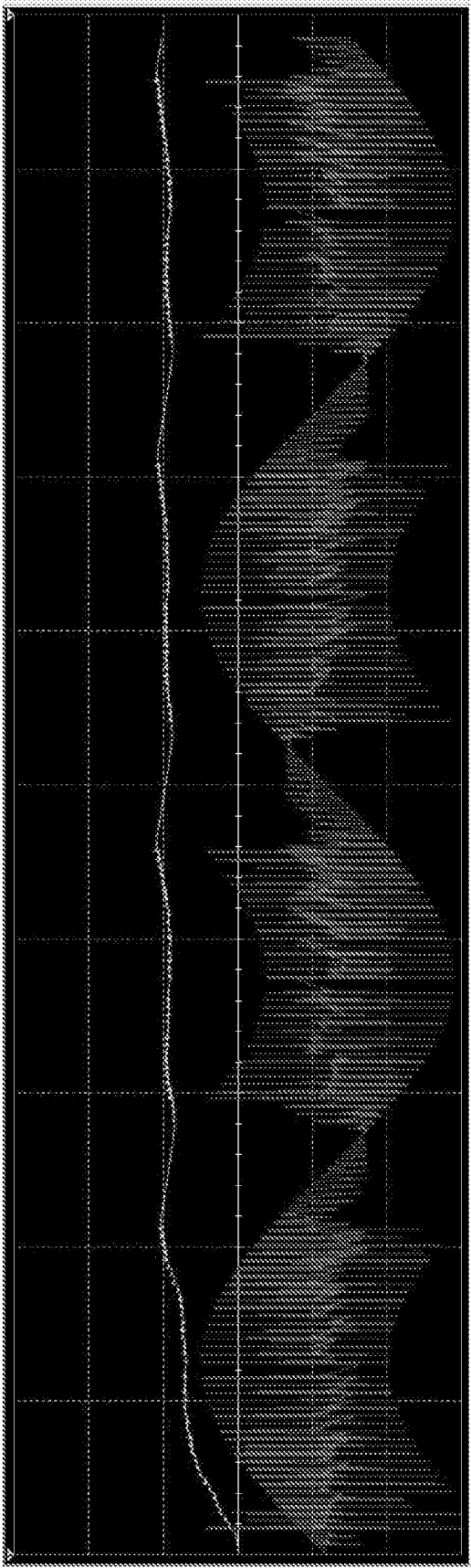
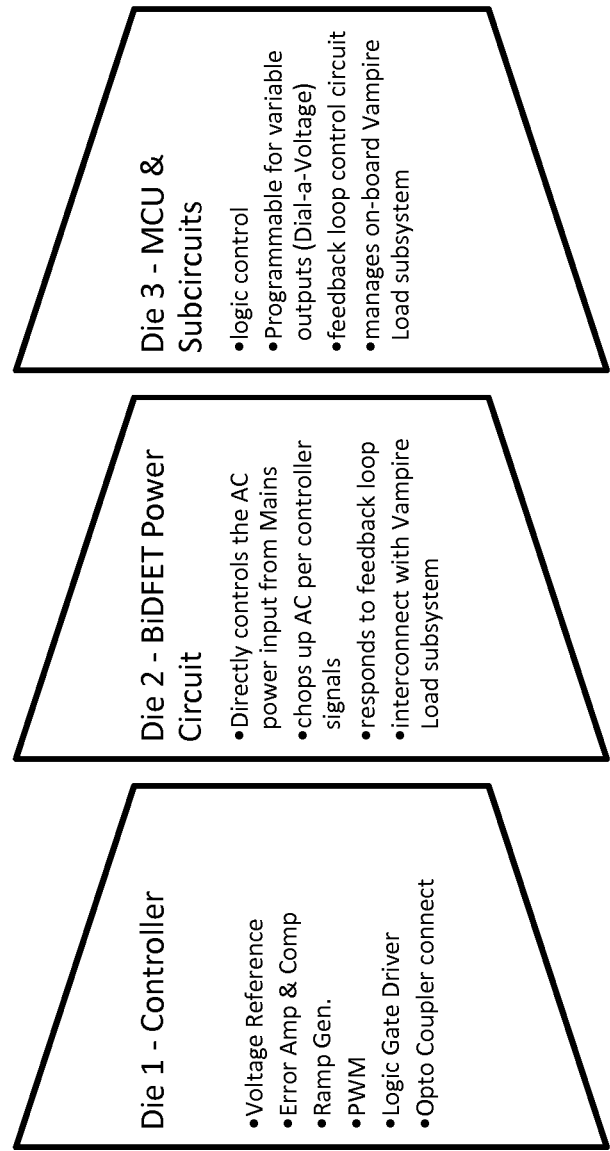


FIG. 44



Block Diagram of Dies for a BiDFET Integrated Module Package

FIG. 45