

ABSTRACT

Fixed Frequency Series-Parallel Mode (SPM) Active Clamp Flyback Converter

A flyback converter can include a series-parallel mode (SPM) active clamp circuit. The active clamp circuit, coupled in parallel with the primary coil, may include multiple networks in parallel. The first network, comprising a switch, one or more snubber capacitors, and one or more diodes, may be configured to absorb and retain the leakage energy from the leakage inductance of the flyback converter. The second network, comprising another switch and a diode, may be configured to create a circulating circuit for the flow of current through the primary coil in a reverse direction and clamp the current to a threshold level. With the active clamp circuit, the flyback converter may first re-capture the leakage energy in the active clamp circuit and then recover it back to the power source.

Figure 1