ABSTRACT

METHOD OF CONTROLLING A DC-DC CONVERTER IN DISCONTINUOUS MODE

A DC-DC converter includes an induction coil (L) as the reactive element, cooperating with two switches (P1, N1), which operate alternately, to supply an output voltage (Vout) of a determined level relative to the level of the input voltage (Vbat). The converter control method includes, in each cycle, a first phase of a first duration with a first switch (N1) being controlled to make said switch conductive, and to increase a current in the induction coil, and a second phase with a second switch (P1) being controlled to be made conductive and to decrease the current in the induction coil during a second adjustable time period. Detection means (2), such as a D flip-flop, are provided for detecting, at the end of the second phase, the sign of any overvoltage across one terminal (Vx, Vy) of the induction coil connected to the switches, and for supplying a detection signal that is kept in a high state or in a low state, depending upon the sign of the detected overvoltage. Timing means (Ri, Ci, 3) receive the detection signal for adapting, in each successive cycle, the second duration of the second phase so as to cancel out the current in the induction coil at the end of the second phase.

Figure 4a