

Title (en)

INDUCTOR CURRENT SYNTHESIZER FOR SWITCHING POWER SUPPLIES

Title (de)

INDUKTIVITÄTS-STROMSYNTHESIZER FÜR SCHALTNETZTEILE

Title (fr)

SYNTHETISEUR DE COURANT INDUCTEUR DESTINE A UNE ALIMENTATION DE DECOUPAGE

Publication

**EP 1290522 A1 20030312 (EN)**

Application

**EP 01920451 A 20010316**

Priority

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- US 19112500 P 20000322
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Abstract (en)

[origin: WO0171446A1] A circuit and method for sensing the inductor (L1) current flowing through to a load (Rload) from a switching power supply without using a sense resistor in the path of the inductor current. In a synchronous buck converter topology, the inductor current is derived by sensing the voltage drop across the synchronous MOSFET (Q1 and Q2) of the half-bridge and reconstructing the current using a sample and hold (12 and 14) technique. A ripple current synthesizer (6) is employed to reconstruct inductor current outside the sample and hold window. The sampled product  $I_{Load} \times R_{DSon}$  is used to update the ripple current estimator with dc information every switching cycle. The resulting voltage waveform is directly proportional to the inductor current. The inductor current synthesizer of the present invention can also be used in boost converter, flyback converter and forward converter topologies.

IPC 1-7

**G05F 1/40**

IPC 8 full level

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