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Lindberg-Poulsen, Kristian; Ouyang, Ziwei; Sen, Gokhan

Publication date:
2013

Document Version
Publisher's PDF, also known as Version of record

US 20140241012A1

(19) **United States**

(12) **Patent Application Publication**

Lindberg-Poulsen et al.

(10) **Pub. No.: US 2014/0241012 A1**

(43) **Pub. Date: Aug. 28, 2014**

(54) **ISOLATED BOOST FLYBACK POWER CONVERTER**

(75) Inventors: **Kristian Lindberg-Poulsen**, Copenhagen N (DK); **Ziwei Ouyang**, Holte (DK); **Gökan Sen**, Holte (DK)

(73) Assignee: **Danmarks Tekniske Universitet**, Kgs. Lyngby (DK)

(21) Appl. No.: **14/131,034**

(22) PCT Filed: **Jun. 11, 2012**

(86) PCT No.: **PCT/EP2012/061020**

§ 371 (c)(1),
(2), (4) Date: **Apr. 28, 2014**

Related U.S. Application Data

(60) Provisional application No. 61/505,205, filed on Jul. 7, 2011.

(30) **Foreign Application Priority Data**

Jul. 7, 2011 (EP) 11172997.6

Publication Classification

(51) **Int. Cl.**
H02M 3/335 (2006.01)

(52) **U.S. Cl.**
CPC ***H02M 3/335*** (2013.01)
USPC **363/17**

(57) **ABSTRACT**

An isolated boost power converter comprises a magnetically permeable multi-legged core (**102**) comprising first and second outer legs (**132**; **136**) and a center leg (**134**) having an air gap (**138**) arranged therein. A boost inductor (Lboost) is wound around the center leg (**134**) or the first and second outer legs (**132**; **136**) of the magnetically permeable multi-legged core (**102**). The boost inductor (Lboost) is electrically coupled between an input terminal (**104**) of the boost converter and a transistor driver (**106**) to be alternatingly charged and discharged with magnetic energy. A first and second series connected secondary transformer windings (SW**1**; SW**2**) with a center-tap (**116**) arranged in-between are wound around the first and second outer legs (**132**; **136**), respectively, of the magnetically permeable multi-legged core (**102**). In a first discharge state, the magnetic energy stored in the boost inductor (Lboost) is discharged by directing a discharge current from the boost inductor through a primary transformer winding (PW**1**; PW**2**) and in a second discharge state, the magnetic energy stored in the boost inductor (Lboost) is discharged by discharging a magnetic flux through the first and second secondary transformer windings (SW**1**; SW**2**).