

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0215131 A1

Bocock et al.

Jun. 27, 2024 (43) **Pub. Date:**

(54) POWER CONVERTER CIRCUIT FOR A LIGHTING DEVICE

(71) Applicant: Lutron Technology Company LLC, Coopersburg, PA (US)

Inventors: Ryan M. Bocock, Austin, TX (US); Quinn Brogan, Hellertown, PA (US)

Assignee: Lutron Technology Company LLC, Coopersburg, PA (US)

(21)Appl. No.: 18/430,386

(22) Filed: Feb. 1, 2024

Related U.S. Application Data

- (63) Continuation of application No. 18/089,405, filed on Dec. 27, 2022, now Pat. No. 11,924,939, which is a continuation of application No. 17/219,071, filed on Mar. 31, 2021, now Pat. No. 11,553,572.
- Provisional application No. 63/003,165, filed on Mar. 31, 2020, provisional application No. 63/108,100, filed on Oct. 30, 2020.

Publication Classification

(51) Int. Cl. H05B 45/385 (2006.01)H05B 45/375 (2006.01)

U.S. Cl. CPC H05B 45/385 (2020.01); H05B 45/375 (2020.01)

(57)ABSTRACT

A power converter circuit may include a control circuit configured to generate a drive signal for rendering a semiconductor switch conductive and non-conductive to generate a bus voltage across a bus capacitor. The control circuit may adjust a minimum operating period of the drive signal to a first value when an output power of the power converter circuit is greater than a first threshold and to a second value when the output power is less than a second threshold. The control circuit may comprise a comparator that generates the drive signal in response to a sense voltage and a threshold voltage. When operating in a standby mode, the control circuit may adjust a magnitude of the threshold voltage based on an instantaneous magnitude of an alternatingcurrent line voltage received by the power converter circuit, such that an input current drawn by the power converter circuit is sinusoidal.

