



US 20240237171A1

(19) **United States**

(12) **Patent Application Publication**
Penzo et al.

(10) **Pub. No.: US 2024/0237171 A1**

(43) **Pub. Date: Jul. 11, 2024**

(54) **SMART LED DRIVER SOLUTION FOR DYNAMIC LED CHAIN**

(52) **U.S. Cl.**

CPC *H05B 45/52* (2020.01); *H02M 1/32* (2013.01); *H05B 45/37* (2020.01)

(71) Applicant: **Infineon Technologies AG**, Neubiberg (DE)

(57)

ABSTRACT

(72) Inventors: **Roberto Penzo**, Vigonza (PD) (IT);
Maurizio Galvano, Padova (IT)

Circuitry configured to deliver an adjustable discharge current to a compensation node of a power converter that supplies a load, which may speed up the power to the load on the new steady state condition, while maintaining the stable response time of the power converter. A driver circuit may measure current to the load and perform overshoot protection for the load. The overshoot protection may also generate a pattern of detectable square wave pulses. The circuitry of this disclosure may adjust the discharge current based on a duration of the pulses in the pattern of pulses, as well as based on a pulse density of the pulses.

(21) Appl. No.: **18/151,997**

(22) Filed: **Jan. 9, 2023**

Publication Classification

(51) **Int. Cl.**

H05B 45/52 (2006.01)

H02M 1/32 (2006.01)

H05B 45/37 (2006.01)

