



US 20240178755A1

(19) **United States**(12) **Patent Application Publication**  
**Scandola**(10) **Pub. No.: US 2024/0178755 A1**(43) **Pub. Date: May 30, 2024**(54) **FAST RECOVERY RESPONSE TO LOAD DUMPS IN A POWER CONVERTER SYSTEM**(52) **U.S. Cl.**CPC ..... *H02M 3/158* (2013.01); *H02M 1/0009* (2021.05); *H02M 1/0058* (2021.05); *H02M 3/157* (2013.01)(71) Applicant: **Infineon Technologies AG**, Neubiberg (DE)(72) Inventor: **Luca Scandola**, Villafranca di Verona (IT)(21) Appl. No.: **18/058,829**(22) Filed: **Nov. 25, 2022****Publication Classification**(51) **Int. Cl.***H02M 3/158* (2006.01)*H02M 1/00* (2006.01)*H02M 3/157* (2006.01)(57) **ABSTRACT**

This disclosure describes techniques for controlling a power converter, such as a closed loop synchronous buck converter that implements a low side switch as a so-called active diode. According to this disclosure, in response to a load dump event in which current from an LC circuit causes a negative load dump current at the power converter, the system may be configured operate in a forced continuous conduction mode (CCM) for a period of time associated with the load dump event, after operating in a normal CCM, and prior to operating in a discontinuous conduction mode (DCM). Unlike normal CCM mode where current is always positive on the power converter, in the forced CCM, current on the power converter is allowed to go negative, in order to dissipate the load event in a quick and effective manner.

