

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2022/0407503 A1 Büthker et al.

Dec. 22, 2022 (43) Pub. Date:

(54) MODE DETECTOR FOR DC-DC **CONVERTERS**

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(21) Appl. No.: 17/350,855

Filed: Jun. 17, 2021 (22)

Publication Classification

(51) Int. Cl. H03K 3/037 (2006.01)H03K 17/22 (2006.01)

(52) U.S. Cl. CPC H03K 3/037 (2013.01); H03K 17/22 (2013.01); H02M 3/00 (2013.01)

(57)ABSTRACT

Various embodiments relate to a mode detector configured to determine a mode of a circuit based upon an attached power

source, including: a first latch configured to hold an first input value and output the first held value and an inverse of the first held value; a second latch configured to hold a second input value and output the second held value and an inverse of the second held value; a first output switch connected between a first power source line and a power source output of the mode detector, wherein the first output switch is configured to be controlled by the output of the first latch; a second output switch connected between a second power source line and the power source output of the mode detector, wherein the second output switch is configured to be controlled by the output of the second latch; a first AND gate with a first input and a second input connected to the inverse output of the second latch, wherein the first input is configured to receive a first power on reset signal based upon the first power source line; and a second AND gate with a first input and a second input connected to the inverse output of the first latch, wherein the first input is configured to receive a second power on reset signal based upon the second power source line, wherein the mode of the circuit is indicated by the outputs of the first latch and the second latch.

