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- (54) **FET ARRAY BYPASS MODULE**
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- (52) **U.S. Cl.**  
CPC ..... **H03K 17/6872** (2013.01); **H02J 7/0029** (2013.01); **H02J 7/0047** (2013.01); **H02J 7/0052** (2013.01); **H02J 7/0065** (2013.01); **H02J 9/002** (2013.01); **H03K 17/08** (2013.01); **H03K 17/122** (2013.01); **H02J 2007/0039** (2013.01)
- (58) **Field of Classification Search**  
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See application file for complete search history.

(57) **ABSTRACT**

A bypass module including a plurality of P-Channel MOSFETs connected in parallel to form a P-Channel MOSFET array, a plurality of N-Channel MOSFETs connected in parallel to form a N-Channel MOSFET array, and a control module to control switching of the P-Channel MOSFET array and the N-Channel MOSFET array is disclosed. A battery or load management device used to switch higher current and low voltages is disclosed. A battery bypass and bypass method for charge, discharge, and charge limiting control for various types of batteries is disclosed.

**20 Claims, 6 Drawing Sheets**

