

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041052197 A

(19) INDIA

(22) Date of filing of Application :01/12/2020

(43) Publication Date : 11/12/2020

(54) Title of the invention : BIDIRECTIONAL DC-DC POWER CONVERTER CIRCUIT TO REDUCE CURRENT RIPPLES

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(57) Abstract :

ABSTRACT: Title: Bidirectional DC-DC Power Converter Circuit to Reduce Current Ripples The present disclosure proposes a bidirectional dc-dc power converter circuit 100 to reduce current ripples in the circuit. The bidirectional dc-dc power converter circuit 100 comprises of a low voltage terminal 101, a high voltage terminal 102, and an ultra-capacitor 103 connected in parallel with the low voltage terminal 101. A switching circuit 104 configured with a set of switches (S1, S2, S3, S^{TM1}, S^{TM2}, S^{TM3}) which is connected in series between the low voltage terminal 101 and the high voltage terminal 102. A set of interleaved inductors 105 between the low voltage terminal 101 and the switching circuit 104 to circulate harmful current ripples within the inductor loop. The proposed bidirectional dc-dc power converter circuit 100 reduces current ripples and optimizes circuit components to enhance the lifetime of the converter and battery system.

No. of Pages : 11 No. of Claims : 5