URN etd-0407109-183724-1976
Author Jinn-Rong Hsu
Author's Email Address No Public.
Statistics This thesis had been viewed 55 times. Download 0 times.
Department
Year 2004
Semester 1
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Parallel Control for Converters with Periodical Reverse Pulse
Date of Defense 0000-00-00
Page Count 64
Keyword
Parallel Control
Periodical Reverse Pulse
Converter

Abstract
The electroplating power supply traditionally controlled by DC current produces a less favorable plating effect when applied to the printed circuit board (PCB). The converter with periodical reverse pulse for electroplating the PCB is proposed in this thesis. A PCB with a high aspect ratio may have more even copper thickness by using the converter with periodical reverse pulse. The converter with periodical reverse pulse utilized parallel control to improve the raising and falling time of the current. The current waveform of periodical reverse pulse is designed by a full digital controller, the controller carry out their functions by combining microprocessor and complex programmable logic device (CPLD). The microprocessor is utilized to control and deal with command and feedback values, and to determine the state of every power transistor. The CPLD produces the driving signals to drive power transistors. The output unit uses full-bridge converters in parallel that control the pulse and reverse current. The method of the parallel control utilized the multi-process to obtain the output current of pulse and reverse with fast rising and falling time. According to the command value of actual current, to average the quantity and sequence of conduction with the parallel control of converter, the power transistors will average and decrease its turn on time, and reducing their loss. The proposed converter with periodical reverse pulse have more smaller size, higher efficiency, and may get better quality of PCB compared with traditional electroplating DC power.
Advisory Committee Ching-Lung Chu - advisor

Files No Any Full Text File.
Date of Submission 2005-08-26