

LOW COST BENCH POWER SUPPLY

Project Report submitted
by
PROTOPAPAS ALKIVIADES

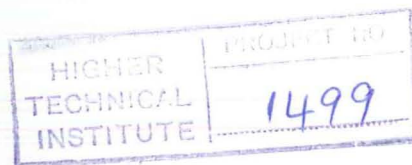
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Project Supervisor: A. Mallouppas
Senior Lecturer H.T.I.

External Assessor: S. Voskarides

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SUMMARY

This project textbook deals with the design, construction, explanation and testing of a Low Cost Bench Power Supply.

In Chapter 1 the relevant theory that everyone who wants to design a power supply is included, because it is necessary to be well known. Here the basic parts of the Voltage Regulators are explained and also their significance to the Regulating action. Also in Chapter 1 the most important points about 3-terminal regulators and about 723 I.C. regulator are mentioned. These voltage regulators have been chosen, for the design of the power supply.

In Chapter 2 the selected circuits are shown. These are about the 5V, 3A fixed voltage regulator, $\pm 15V$, 1A fixed voltage regulators and the 0V up to 25V variable voltage regulator. Many circuits were first investigated but only the final ones are presented.

In Chapter 3 explanation is provided, concerning the construction (PCBs and metal frame) of the power supply. Pictures of the PCBs are also included, and detailed lists of the various components used for the construction of the voltage regulators.

In Chapter 4 detailed circuit description and explanation of the operation of the voltage regulators are given. Description also of the Unregulated power supply used is also available in this Chapter too.

In Chapter 5 the results of the testing that was carried out are given. The load regulation curves for each regulator are shown, and also details concerning ripple voltage and short circuit current are also provided.

In Chapter 6 instructions how to use the power supply are given.

Conclusions and suggestions on the work done are available in Chapter 7.

The power supply that was created from this work is an efficient one. A better circuit could have been constructed for the $\pm 15V$ regulators but this would have increase the cost of the power supply, since the aim was to construct it at a low cost.

Sample calculations and relevant informations are included in the appendices.

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REFERENCE