DESIGN AN ISOLATED FORWARD CONVERTER

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DESIGN AN ISOLATED FORWARD CONVERTER

by

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DECLARATION SHEET

I hereby declare that my Final Year Project Thesis is the result of my research work under supervision of Prof. R. T. Kennedy. All literature sources used for the writing of this thesis have been adequately referenced.

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ABSTRACT

This final year project report provides information related to the design and fabrication of a single transistor Isolated Forward Converter. The report provides a step by step design procedure and the selection process for the major components required to develop a high efficiency DC-DC converter suitable for a wide range of applications. The report includes a PCB design, product sub-subassembly configurations, test procedures, troubleshooting and concludes with a recommendation for product enhancement.

MEREKA BENTUK PENUKAR HADAPAN TERPENCIL

ABSTRAK

Laporan projek tahun akhir memberikan maklumat yang berkaitan dengan reka bentuk dan fabrikasi 'Single Transistor Isolated Forward Converter'. Laporan ini memberikan langkah demi langkah prosedur reka bentuk dan proses pemilihan komponen utama yang diperlukan untuk menghasilkan kecekapan yang tinggi bagi penukar AT - AT yang sesuai untuk pelbagai aplikasi. Laporan ini merangkumi rekabentuk PCB, configurasi tatarajah produk sub-subassembly, prosedur ujian dan diakhiri dengan cadangan untuk peningkatan produk.

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LIST OF SYMBOLS, ABBREVIATIONS AND NOMENCLATURE

SMPS	Switched Mode Power Supply
PWM	Pulse Width Modulation
MOSFET	Metal-Oxide-Semiconductor Field-Effect Transistor
AC	Alternating Current
DC	Direct Current
Hz	Hertz
V	Voltage
A	Ampere
D_{sw}	Duty Cycle
D1	Diode 1
C	Capacitor
L	Inductor
R	Resistor
T	Time
N	Number of turn
f	Frequency
PCB	Printed Circuit Board