

High Power Led Driver Circuit Design And Application Supplied Cd Rom Power Supplies For Led Driving Traditional Chinese Edition

Volume is indexed by Thomson Reuters CPCI-S (WoS). This second collection on "Advanced Measurement and Test II" is dedicated to the electronic testing of devices, boards and systems; covering the complete cycle from design verification, design-for-testing, design-for-manufacturing, silicon de-bugging, manufacturing testing, system testing, diagnosis, failure analysis ... and back to process and design improvement. This will be an invaluable guide to the topics.

Designing new products and improving existing ones is a continual process. Industrial design engineering is an industrial engineering process applied to product designs that are to be manufactured through techniques of production operations. Excellent industrial design engineering programs are essential for the nation's industry to succeed in selling useful and ecologically justifiable and usable products on a market flooded with goods and services. This unique text on industrial design engineering integrates basic knowledge, insight, and working methods from industrial engineering and product design subjects. Industrial Design Engineering: Inventive Problem Solving provides a combination of engineering thinking and design skills that give the researchers, practitioners, and students an excellent foundation for participation in product development projects and techniques for establishing and managing such projects. The design principles are presented around examples related to the designing of products, goods, and services. Case studies are developed around real problems and are based on the customer's needs. Industrial engineering is a field with a large and extensive presence in our nation's manufacturing and service industries. From this new book, researchers, practitioners, and students will get an easy access to a wide range of effective industrial engineering tools and techniques in a concise format that will provide in-depth coverage emphasizing new thinking paradigms, tools, techniques, and models for industrial engineering problem solving.

This book analyzes multi-MHz high frequency resonant DC-DC power converters with operating frequencies ranging from several MHz to tens of MHz in detail, aiming to support researchers and engineers with a focus on multi-MHz high frequency converters. The inverter stage, rectifier stage, matching network stage are analyzed in detail. Based on the three basic stages, typical non-isolated and isolated resonant DC-DC converters are depicted. To reduce the high driving loss under multi-MHz, resonant driving methods are introduced and improved. Also, the design and selection methods of passive and active component under multi-MHz frequency are described, especially for aircore inductor and transformer. Furthermore, multi-MHz resonant converter provides an approach for achieving flexible system.

Design Note Collection, the third book in the Analog Circuit Design series, is a comprehensive volume of applied circuit design solutions, providing elegant and practical design techniques. Design Notes in this volume are focused circuit explanations, easily applied in your own designs. This book includes an extensive power management section, covering switching regulator design, linear regulator design, microprocessor power design, battery management, powering LED lighting, automotive and industrial power design. Other sections span a range of analog design topics, including data conversion, data acquisition, communications interface design, operational amplifier design techniques, filter design, and wireless, RF, communications and network design. Whatever your application -industrial, medical, security, embedded systems, instrumentation, automotive, communications infrastructure, satellite and radar, computers or networking; this book will provide practical design techniques, developed by experts for tackling the challenges of power management, data conversion, signal conditioning and wireless/RF analog circuit design. A rich collection of applied analog circuit design solutions for use in your own designs. Each Design Note is presented in a concise, two-page format, making it easy to read and assimilate. Contributions from the leading lights in analog design, including Bob Dobkin, Jim Williams, George Erdi and Carl Nelson, among others. Extensive sections covering power management, data conversion, signal conditioning, and wireless/RF.

Today the cost of solid-state two-dimensional imagers has dramatically dropped, introducing low cost systems on the market suitable for a variety of applications, including both industrial and consumer products. However, these systems can capture only a two-dimensional projection (2D), or intensity map, of the scene under observation, losing a variable of paramount importance, i.e., the arrival time of the impinging photons. Time-Of-Flight (TOF) Range-Imaging (TOF) is an emerging sensor technology able to deliver, at the same time, depth and intensity maps of the scene under observation. Featuring different sensor resolutions, RIM cameras serve a wide community with a lot of applications like monitoring, architecture, life sciences, robotics, etc. This book will bring together experts from the sensor and metrology side in order to collect the state-of-art researchers in these fields working with RIM cameras. All the aspects in the acquisition and processing chain will be addressed, from recent updates concerning the photo-detectors, to the analysis of the calibration techniques, giving also a perspective onto new applications domains.

Information Science and Electronic Engineering is a collection of contributions drawn from the International Conference of Electronic Engineering and Information Science (ICEEIS 2016) held January 4-5, 2016 in Harbin, China. The papers in this proceedings volume cover various topics, including: - Electronic Engineering - Information Science and Information Technologies - Computational Mathematics and Data Mining - Image Processing and Computer Vision - Communication and Signal Processing - Control and Automation of Mechatronics - Methods, Devices and Systems for Measurement and Monitoring - Engineering of Weapon Systems - Mechanical Engineering and Material Science - Technologies of Processing. The content of this proceedings volume will be of interest to professionals and academics in the fields of Electronic Engineering, Computer Science and Mechanical Engineering.

In this book, 20 papers focused on different fields of power electronics are gathered. Approximately half of the papers are focused on different control issues and techniques, ranging from the computer-aided design of digital compensators to more specific approaches such as fuzzy or sliding control techniques. The rest of the papers are focused on the design of novel topologies.

The fields in which these controls and topologies are applied are varied: MMCs, photovoltaic systems, supercapacitors and traction systems, LEDs, wireless power transfer, etc.

Power Supplies for LED Driving, Second Edition explores the wide use of light-emitting diodes due to their efficient use of power. The applications for power LEDs include traffic lights, street lamps, automotive lighting, architectural lights, theatre lighting, household light replacements, signage lighting (replacing neon strip lights and fluorescent tubes), LCD display backlighting, and many more. Powering

(driving) these LED's is not always simple. Linear driving is inefficient and generates far too much heat. With a switching supply, the main issues are EMI, efficiency, and of course cost. This book covers the design trade-offs involved in LED driving applications, from low-power, to UB-LEDs and beyond. Provides a practical, hands-on approach to power supply design for LED drivers Contains detailed examples of what works throughout the design process Presents commentary on how the calculated component value compares with the actual value used, including a description of why the choice was made This book gathers the proceedings of the 9th International Conference on Frontier Computing, held in Kyushu, Japan on July 9–12, 2019, and provides comprehensive coverage of the latest advances and trends in information technology, science and engineering. It addresses a number of broad themes, including communication networks, business intelligence and knowledge management, web intelligence, and related fields that inspire the development of information technology. The respective contributions cover a wide range of topics: database and data mining, networking and communications, web and internet of things, embedded systems, soft computing, social network analysis, security and privacy, optical communication, and ubiquitous/pervasive computing. Many of the papers outline promising future research directions, and the book will benefit students, researchers and professionals alike. Further, it offers a useful reference guide for newcomers to the field.

Power Supplies for LED DrivingNewnes

This book provides a detailed overview of the most recent advances in the fascinating world of light-emitting diodes (LEDs), organic light-emitting diodes (OLEDs), and photodetectors (PDs). Chapters in Section 1 discuss the different types and designs of LEDs/OLEDs and their use in light output, color rendering, and more. Chapters in Section 2 examine innovative structures, emerging materials, and physical effects of PDs. This book is a useful resource for students and scientists working in the field of photonics and advanced technologies.

Being the premier forum for the presentation of new advances and research results in the fields of Industrial Engineering, IEEM 2014 aims to provide a high-level international forum for experts, scholars and entrepreneurs at home and abroad to present the recent advances, new techniques and applications face and face, to promote discussion and interaction among academics, researchers and professionals to promote the developments and applications of the related theories and technologies in universities and enterprises and to establish business or research relations to find global partners for future collaboration in the field of Industrial Engineering. All the goals of the international conference are to fulfill the mission of the series conference which is to review, exchange, summarize and promote the latest achievements in the field of industrial engineering and engineering management over the past year and to propose prospects and vision for the further development.

Visible light communication (VLC) is an evolving communication technology for short-range applications. Exploiting recent advances in the development of high-power visible-light emitting LEDs, VLC offers an energy-efficient, clean alternative to RF technology, enabling the development of optical wireless communication systems that make use of existing lighting infrastructure. Drawing on the expertise of leading researchers from across the world, this concise book sets out the theoretical principles of VLC, and outlines key applications of this cutting-edge technology. Providing insight into modulation techniques, positioning and communication, synchronisation, and industry standards, as well as techniques for improving network performance, this is an invaluable resource for graduate students and researchers in the fields of visible light communication, optical wireless communication, and industrial practitioners in the field of telecommunications.

LED technology has been used widely in various applications due to its advantage in term of functionality, high efficiency, low cost, small size and high reliability. In order to improve LED performance and prolong LED's life, High Power LED driver is been developed. LED driver is used to control output voltage by using current mode controlled method. This development of LED driver can increase the LED operation efficiency, provide high voltage protection, decreases the driver size and lastly make possible of user friendly installation. Voltage source is step up by using boost converter as main circuit. In control circuit, current mode controlled is used to regulate output characteristic of High Power LED. LTC 3783 is used as PWM controller to drive the gate and provide pulse signal to the MOSFET. This driver is designed to operate load that consists of 6 units LED each rating of 5 Watt connected in series. Theoretical calculation is made to obtain component specification. The LTspice software is used to simulate the driver circuit by using calculated parameters before move on to hardware implementation. Eagle software is used to design the Printed Circuit Board (PCB). Then, all components are mounted on the PCB which is made of FR4 material. The hardware built is tested experimentally and the output waveform is recorded.

This book comprising seven parts is organized under two sections. The first section deals with environment containing four parts, whereas the second section, containing three parts, is on energy. The first part deals with some aspects of hydrologic impacts of global warming and anthropogenic changes. Part II is on bio-environment and discusses plants, biomass, and bacterial species. Part III focuses on chemical environment. Section one is concluded with Part IV on social environment. Section two starts out with Part V on solar energy. Hydropower is discussed in Part VI. The concluding Part VII deals with biogas. The book will be of interest to researchers and practitioners in the field of water resources, hydrology, environmental resources, agricultural engineering, watershed management, earth sciences, as well as those engaged in natural resources planning and management. Graduate students and those wishing to conduct further research in water and environment and their development and management may find the book to be of value.

Solid State Lighting Reliability: Components to Systems begins with an explanation of the major benefits of solid state lighting (SSL) when compared to conventional lighting systems including but not limited to long useful lifetimes of 50,000 (or more) hours and high efficacy. When designing effective devices that take advantage of SSL capabilities the reliability of internal components (optics, drive electronics, controls, thermal design) take on critical importance. As such a detailed discussion of reliability from performance at the device level to sub components is included as well as the integrated systems of SSL modules, lamps and luminaires including various failure modes, reliability testing and reliability performance. A follow-up, Solid State Lighting Reliability Part 2, was published in 2017.

This book presents a comprehensive introduction to the principles of power electronics, focusing on the switched transformer concept and phasor transformation techniques as employed in the analysis and design of power electronic circuits. Phasor transformations, as introduced in this book, make the time-varying nature of a switching converter simple and easy to handle, transforming it into an equivalent time-invariant circuit. The book starts with an introduction to the philosophy and fundamental principles of power electronics. The switched transformer concept, which is applicable to any switching converter, is introduced, and it is shown how DC-DC converters analyses are then so straightforward that very little equational manipulation is needed. Then the phasor transformation techniques are comprehensively explained over three parts. Single phase and multi-phase AC systems are dealt with through the single phase phasor transformation and circuit DQ transformation, respectively. A general unified phasor transformation is then introduced for the static and dynamic cases. The final part of the book considers current and potential extensions of the technique in various fields of application, including wireless power transfer, signal processing, power systems and renewable energy. The book avoids the piece-wise linear circuit models used in other titles, with which the mathematical results become too complicated to be used in practice. No cumbersome equations or matrix manipulations are needed with the phasor transformation techniques introduced in this book. It will be a valuable reference source for engineering students and practising researchers in power electronics and related areas.

This book provides an insight into recent technological trends and innovations in mobility solutions and platforms to improve mobility of visually impaired people. The authors' goal is to help to contribute to the social and societal inclusion of the visually impaired. The book's topics include, but are not limited to, obstacle detection systems, indoor and outdoor navigation, transportation sustainability systems, and

hardware/devices to aid visually impaired people. The book has a strong focus on practical applications, tested in a real environment. Applications include city halls, municipalities, and companies that can keep up to date with recent trends in platforms, methodologies and technologies to promote urban mobility. Also discussed are broader realms including education, health, electronics, tourism, and transportation. Contributors include a variety of researchers and practitioners around the world. Features practical, tested applications of technological mobility solutions for visual impaired people; Presents topics such as obstacle detection systems, urban mobility, smart home services, and ambient assisted living; Includes a number of application examples in education, health, electronics, tourism, and transportation.

The Fiber Optic Reference Guide offers readers a solid understanding of the principles of fiber optic technology, especially as it relates to telecommunications, from its early days to developing future trends. Using a minimum of jargon and a wealth of illustrations, this book provides the underlying principles of fiber optics as well as essential practical applications. The third edition is updated to include expanded sections on light emitters, semiconductor optical amplifiers, Bragg gratings, and more systems design considerations. Fiber optics plays a key role in communications, as well as in broadcast and cable systems. Engineers working with fiber optics as well as newcomers to the industry will find the third edition of this reference guide invaluable. It will help the reader develop a solid understanding of the underlying principles of this rapidly changing technology as well as its essential practical applications. The text is thoroughly indexed and illustrated.

The increased efficiency and quality constraints imposed on electrical energy systems have inspired a renewed research interest in the study of formal approaches to the analysis and control of power electronics converters. Switched systems represent a useful framework for modeling these converters and the peculiarities of their operating conditions and control goals justify the specific classification of "switched electronic systems". Indeed, idealized switched models of power converters introduce problems not commonly encountered when analyzing generic switched models or non-switched electrical networks. In that sense the analysis of switched electronic systems represents a source for new ideas and benchmarks for switched and hybrid systems generally. Dynamics and Control of Switched Electronic Systems draws on the expertise of an international group of expert contributors to give an overview of recent advances in the modeling, simulation and control of switched electronic systems. The reader is provided with a well-organized source of references and a mathematically-based report of the state of the art in analysis and design techniques for switched power converters. Intuitive language, realistic illustrative examples and numerical simulations help the reader to come to grips with the rigorous presentation of many promising directions of research such as: converter topologies and modulation techniques; continuous-time, discrete-time and hybrid models; modern control strategies for power converters; and challenges in numerical simulation. The guidance and information imparted in this text will be appreciated by engineers, and applied mathematicians working on system and circuit theory, control systems development, and electronic and energy conversion systems design.

In this book, nine papers focusing on different fields of power electronics are gathered, all of which are in line with the present trends in research and industry. Given the generality of the Special Issue, the covered topics range from electrothermal models and losses models in semiconductors and magnetics to converters used in high-power applications. In this last case, the papers address specific problems such as the distortion due to zero-current detection or fault investigation using the fast Fourier transform, all being focused on analyzing the topologies of high-power high-density applications, such as the dual active bridge or the H-bridge multilevel inverter. All the papers provide enough insight in the analyzed issues to be used as the starting point of any research. Experimental or simulation results are presented to validate and help with the understanding of the proposed ideas. To summarize, this book will help the reader to solve specific problems in industrial equipment or to increase their knowledge in specific fields.

International Academic Conference in Prague 2017

In the past four years we have witnessed rapid development in technology and significant market penetration in many applications for LED systems. New processes and new materials have been introduced; new standards and new testing methods have been developed; new driver, control and sensing technologies have been integrated; and new and unknown failure modes have also been presented. In this book, Solid State Lighting Reliability Part 2, we invited the experts from industry and academia to present the latest developments and findings in the LED system reliability arena. Topics in this book cover the early failures and critical steps in LED manufacturing; advances in reliability testing and standards; quality of colour and colour stability; degradation of optical materials and the associated chromaticity maintenance; characterization of thermal interfaces; LED solder joint testing and prediction; common failure modes in LED drivers; root causes for lumen depreciation; corrosion sensitivity of LED packages; reliability management for automotive LEDs, and lightning effects on LEDs. This book is a continuation of Solid State Lighting Reliability: Components to Systems (published in 2013), which covers reliability aspects ranging from the LED to the total luminaire or system of luminaires. Together, these two books are a full set of reference books for Solid State Lighting reliability from the performance of the (sub-) components to the total system, regardless its complexity.

Volume is indexed by Thomson Reuters CPCI-S (WoS). This collection of peer-reviewed papers brings together the latest advances and applications in the fields of composites, micro-/nano-materials, steel and iron, ceramics, metal-alloy materials, polymer materials, optical/electronic/magnetic materials, materials physics and chemistry, structural materials and functional materials.

An indispensable guide for engineers and data scientists in design, testing, operation, manufacturing, and maintenance A road map to the current challenges and available opportunities for the research and development of Prognostics and Health Management (PHM), this important work covers all areas of electronics and explains how to: assess methods for damage estimation of components and systems due to field loading conditions assess the cost and benefits of prognostic implementations develop novel methods for in situ monitoring of products and systems in actual life-cycle conditions enable condition-based (predictive) maintenance increase system availability through an extension of maintenance cycles and/or timely repair actions; obtain knowledge of load history for future design, qualification, and root cause analysis reduce the occurrence of no fault found (NFF) subtract life-cycle costs of equipment from reduction in inspection costs, downtime, and inventory Prognostics and Health Management of Electronics also explains how to understand statistical techniques and machine learning methods used for diagnostics and prognostics. Using this valuable resource, electrical engineers, data scientists, and design engineers will be able to fully grasp the synergy between IoT, machine learning, and risk assessment.

This book is based on the 18 tutorials presented during the 25th workshop on Advances in Analog Circuit Design. Expert designers present readers with information about a variety of topics at the frontier of analog circuit design, including low-power and energy-efficient analog electronics, with specific contributions focusing on the design of continuous-time sigma-delta modulators, automotive electronics, and power management. This book serves as a valuable reference to the state-of-the-art, for anyone involved in analog circuit research and development.

This book discusses the implications of new technologies for a secured society. As such, it reflects the main focus of the International Conference on Ethical Hacking, eHaCon 2018, which is essentially in evaluating the security of computer systems using penetration testing techniques. Showcasing the most outstanding research papers presented at the conference, the book shares new findings on computer network attacks and defenses, commercial security solutions, and hands-on, real-world security experience. The respective sections include network security, ethical hacking, cryptography, digital forensics, cloud security, information security, mobile communications security, and cyber security.

This book discusses the application of quality and reliability engineering in Asian industries, and offers information for multinational companies (MNC) looking to transfer some of their operation and manufacturing capabilities to Asia and at the same time maintain high levels of reliability and quality. It also provides small and medium enterprises (SME) in Asia with insights into producing high-quality and reliable products. It mainly comprises peer-reviewed papers that were presented at the Asian Network for Quality (ANQ) Congress 2014 held in Singapore (August, 2014), which provides a platform for companies, especially those within Asia where rapid changes and growth in manufacturing are taking place, to present their quality and reliability practices. The book presents practical demonstrations of how quality and reliability methodologies can be modified for the unique Asian market, and as such is a valuable resource for students, academics, professionals and practitioners in the field of quality and reliability.

The main links with your PC and the outside world are the centronic port, used for connecting the printer, the RS232 port, used for the mouse, and the games port for a joystick. This book explores how these input/output (I/O) ports can be put to use through a range of other interfacing applications. This is especially useful for laptop and palmtop PCs which cannot be fitted with internal I/O cards. A novel approach is taken by this book, combining the hardware through which the ports can be explored, and the software programming needed to carry out a range of experiments. Circuits are provided for simple testing tools, and three experimental boards - which can also be purchased ready-made. A huge range of applications are considered, turning the PC into a flexible core of a variety of systems. External devices considered include opto-isolator drivers, power drivers, LED drivers, relay drivers, special driver ICs, and methods of driving opto-isolated zero-crossing solid state relays, stepper motors, sound generating devices and displays. Ways of gathering information from the outside world are given, as well as connection to digital devices, remote control and digital communication. As well as teaching in this field, Pei An has written numerous articles for magazines such as Electronics World and Electronics Today International. A hands-on guide to exploring your PC's input/output ports Covers the hardware and software aspects of interfacing An exciting project-based approach to an important subject area

Contributions include but are not limited to the following All organic visible light communications (VLCs) Channel modelling and characterisation, channel capacity analysis Diversity techniques, dimming, data communications and localisation in VLCs Free space optics (indoor, outdoor and under water) Last meter to last mile Hybrid RF OWC technology, MIMO for OWC Hybrid IR VLC technology Modelling of various noises in optical wireless communications Modulation, coding and detection schemes Mobile to infrastructure and mobile to mobile optical communication Novel (photonic) devices and components OWC networks architecture, PHY MAC design, cross layer design etc Applications of OWC (VLC, FSO) Next generation wireless networks OWC transceiver design and optimization Ultraviolet communications

This book is a collection of research articles and critical review articles, describing the overall approach to energy management. The book emphasizes the technical issues that drive energy efficiency in context of power systems. This book contains case studies with and without solutions on modelling, simulation and optimization techniques. It covers some innovative topics such as medium voltage (MV) back-to-back (BTB) system, cost optimization of a ring frame unit in textile industry, rectenna for radio frequency (RF) energy harvesting, ecology and energy dimension in infrastructural designs, 2.4 kW three-phase inverter for aircraft application, study of automatic generation control (AGC) in a two area hydrothermal power system, energy-efficient and reliable depth-based routing protocol for underwater wireless sensor network, and power line communication using LabVIEW. This book is primarily targeted at researchers and senior graduate students, but is also highly useful for the industry professional and scientists.

The book systematically introduces the visible light communication (VLC) technology in detail. Basic concepts and how to realize the system are both illustrated, including the transmitter, channel, and the receiver. In addition, a good many experimental results are presented to help readers further understand the VLC technologies. The upper-layer protocols of visible light communication system and the technology trends are also discussed. This book can be a good reference work for researchers, engineers, and graduate students in the fields of communications, LED, and optics.

The 3rd Annual International Conference on Design, Manufacturing and Mechatronics (ICDMM2016) was successfully held in Wuhan, China in 2016. The ICDMM2016 covers a wide range of fundamental studies, technical innovations and industrial applications in industry design, manufacturing and mechatronics. The ICDMM2016 program consists of 4 keynote speeches, 96 oral and poster presentations. We were pleased to have more than 80 participants from China, South Korea, Taiwan, Japan, Malaysia, and Saudi Arabia. However, finally, only 83 articles were selected after peer review to be included in this proceedings.

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