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State Devices And
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Circuits
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***Solid State
Devices And
Circuits
Combining solid
state devices
with electronic***

Where To
Download Solid
State Devices And
***circuits for an
introductory-level
microelectronics
course, this
textbook offers
an integrated
approach so that
students can
truly understand
how a circuit
works. A concise
writing style is***

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***employed, with
the right level of
detail and
physics to help
students
understand how
a device works.
Other features
include an
emphasis on
modelling of
electronic***

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***devices, and
analysis of non-
linear circuits.***

***Spice problems,
worked examples
and end-of-
chapter problems
are included.***

***Gives basic and
up-to-date
information about
noise sources in***

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***electronic
devices.***

***Demonstrates
how this
information can
be used to
calculate the
noise
performance, in
particular the
noise figure, of
electronic***

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State Devices And
Circuits using
these devices.
Circuits, 1st
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**Optimization
procedures, both
for the circuits
and for the
devices, are then
devised based on
these data. Gives
an elementary
treatment of
thermal noise,**

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***diffusion noise,
and velocity-
fluctuation noise,
including
quantum effects
in thermal noise
and maser noise.***

***Solid State
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Memory Mass
Storage***

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Microwave
Devices, Circuits
and Subsystems
for
Communications
Engineering
Semiconductor
Device Physics***

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Circuits, 1st
Edition
and Design
teaches readers
how to approach
device design
from the point
of view of
someone who
wants to
improve devices
and can see the
opportunity and
challenges. It
begins with

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Circuits, 1st
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coverage of
basic physics
concepts,
including the
physics behind
polar heterostr
uctures and
strained hetero
structures. The
book then
details the
important
devices ranging

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from p-n diodes
to bipolar and
field effect
devices. By
relating device
design to
device
performance and
then relating
device needs to
system use the
student can see
how device

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design works in
the real world.
The increasing
demand for
electronic
devices for
private and
industrial
purposes lead
designers and
researchers to
explore new
electronic

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devices and
circuits that
can perform
several tasks
efficiently
with low IC
area and low
power
consumption. In
addition, the
increasing
demand for
portable

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devices
intensifies the
call from
industry to
design sensor
elements, an
efficient
storage cell,
and large
capacity memory
elements.
Several industr
y-related

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issues have
also forced a
redesign of
basic
electronic
components for
certain
specific
applications.
The
researchers,
designers, and
students

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working in the
area of
electronic
devices,
circuits, and
materials
sometimes need
standard
examples with
certain
specifications.
This
breakthrough

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work presents
this knowledge
of standard
electronic
device and
circuit design
analysis,
including
advanced
technologies
and materials.
This
outstanding new

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volume presents
the basic
concepts and
fundamentals
behind devices,
circuits, and
systems. It is
a valuable
reference for
the veteran
engineer and a
learning tool
for the

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student, the
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another field
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engineering. It
is a must-have
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Circuits, and
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summarizes the
recent advances
in
cryoelectronics
starting from
the
fundamentals in
physics and
semiconductor

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devices to
electronic
systems, hybrid
superconductor-
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technologies,
photonic
devices,
cryocoolers and
thermal
management.
Furthermore,
this book

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provides an
exploration of
the currently
available
theory,
research, and
technologies
related to cryo
electronics,
including
treatment of
the solid state
physical

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properties of
the materials
used in these
systems.

Current
applications
are found in
infrared
systems,
satellite
communications
and medical
equipment.

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There are
opportunities
to expand in
newer fields
such as
wireless and
mobile
communications,
computers, and
measurement and
scientific
equipment. Low
temperature

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operations can
offer certain
advantages such
as higher
operational
speeds, lower
power
dissipation,
shorter signal
transmission
times, higher
semiconductor
and metal

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thermal
conductivities,
and improved
digital and
analog circuit
performance.

The computer, t
elecommunicatio
n, and cellular
phone market is
pushing the
semiconductor
industry

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towards the
development of
very aggressive
device and
integrated
circuit
fabrication
technologies.
This is taking
these
technologies
towards the
physical

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miniaturization
limit, where
quantum effects
and fabrication
costs are
becoming a
technological
and economical
barrier for
further
development. In
view of these
limitations,

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operation of
semiconductor
devices and
circuits at low
temperature
(cryogenic
temperature) is
studied in this
book. * It is a
book intended
for a wide
audience:
students,

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engineers,
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universities,
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which is for
the first time
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An Introduction
Microwave Solid
State Devices
and
Applications
Solid-state
Devices Manual

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This book provides a modern and concise treatment of the solid state electronic devices that are fundamental to electronic systems and information technology. Solid state electronic devices are those circuits or devices built completely from solid materials and in

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which the electrons, or other charge carriers, are kept entirely within the solid material. The term is often used to contrast with the earlier technologies of vacuum and gas-discharge tube devices, and it is also conventional to exclude electro-mechanical devices

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from the term solid state. While solid-state can include crystalline, polycrystalline and amorphous solids and refer to electrical conductors, insulators and semiconductors, the building material is most often a crystalline semiconductor. The

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main devices that
comprise
semiconductor
integrated circuits
are covered in a
clear manner
accessible to the
wide range of
scientific engineering
disciplines that are
impacted by this
technology. This
book can expect to
derive a solid

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foundation for understanding modern electronic devices and also be prepared for future developments and advancements in this far-reaching area of science and technology. It presents basic and state-of-the-art topics on materials physics, device physics, and

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basic circuit building blocks which will be useful to researchers as well as practicing engineers.

Aims of the Book: The foremost and primary aim of the book is to meet the requirements of students pursuing following courses of study: 1. Diploma in Electronics and

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course offered by
various Indian and
foreign polytechnics
and technical
institutes like city
and guilds of London
Institute(CGLI).2.B.E
(Elect.&
Comm.)-4-year
course offered by
various Engineering
Colleges.efforts have

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been made to cover
the

papers: Electronics-I
& II and Pulse and
Digital Circuits. 3.B.S
c.(Elect.)-3-Year
vocationalised course
recently introduced
by Approach.

This introductory
book assumes
minimal knowledge
of the existence of
integrated circuits

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and of the terminal
behavior of

electronic

components such as
resistors, diodes, and
MOS and bipolar
transistors. It

presents to readers
the basic information
necessary for more
advanced processing
and design books.

Focuses mainly on
the basic processes

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used in fabrication,
including lithography,
oxidation, diffusion,
ion implementation,
and thin film
deposition. Covers
interconnection
technology,
packaging, and yield.
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readers interested in
the area of
fabrication of solid

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state devices and
integrated circuits.

Electronic Devices
and Circuits

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and Circuits

Electrical and

Electronic Devices,
Circuits, and

Materials

Physics, Devices,
Circuits, and

Applications

Solid State

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State Devices And
Electronic Devices

Circuits 1st
Edition
This volume
extensively
covers
semiconductor
pulse circuits,
explaining circuit
operation and
analysis and
discusses in
detail practical
pulse circuit
design methods.

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Focuses on the basic operating principles and the techniques used to incorporate the devices into circuit applications. Part one reviews fundamental principles in transmission

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lines and circuits
as well as
semiconductor
physics. Two-
terminal solid-
state devices,
circuits and
applications are
covered in the
second section.
Part three
discusses three-
terminal solid-

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state devices,
circuits and
applications.

Introduces noise
figures and
system
parameters for
receiver design.
Includes
numerous
examples and
problems.

Memory Mass

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Storage describes the fundamental storage technologies, like Semiconductor, Magnetic, Optical and Uncommon, detailing the main technical characteristics of the storage devices. It deals

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not only with semiconductor and hard disk memory, but also with different ways to manufacture and assembly them, and with their application to meet market requirements. It also provides an

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introduction to
the
epistemological
issues arising in
defining the
process of
remembering, as
well as an
overview on
human memory,
and an
interesting
excursus about

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biological
memories and
their
organization, to
better
understand how
the best memory
we have, our
brain, is able to
imagine and
design memory.

Solid State
Fundamentals for

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Solid-State
Circuits
Modern
Semiconductor
Devices for
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Solid-State Circuits
provides an

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introduction to the theory and practice underlying solid-state circuits, laying particular emphasis on field effect transistors and integrated circuits. Topics range from construction and characteristics of semiconductor

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devices to

rectification and

power supplies, low-
frequency

amplifiers, sine- and
square-wave

oscillators, and high-
frequency effects

and circuits. Black-
box equivalent

circuits of bipolar

transistors, physical

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equivalent circuits of bipolar transistors, and equivalent circuits of field effect transistors are also covered. This volume is divided into three sections comprised of 11 chapters and begins with an introduction to the basic physics

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of bulk

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semiconductors,

Edition

diodes, and

transistors, along

with the construction

and characteristics of

devices and

integrated circuits.

Physics is kept to the

minimum necessary

for the

understanding of

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devices. Attention then turns to the fundamental use of semiconductors in rectifier, amplifier, and oscillator circuits. The high frequency use of transistors is given consideration, and in all examples designs from device

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characteristics are included. The remaining chapters focus on the development of equivalent circuits of transistors. This approach highlights the alternating current operation of devices, and some of the more

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sophisticated circuits
using semiconductor
devices are

demonstrated. This
book will be of
interest to students
and practitioners of
electronics and
electrical
engineering.

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Field Effect
Transistors, JFET.
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Semiconductor
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devices. Examines
compact and low
cost circuit design
methodologies.

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Design

Electrical

Engineering Divison

Solution Manual

Microwave Solid-
state Devices and
Circuits

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electrical engineering
students or for

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practicing engineers
and scientists
interested in updating
their understanding
of modern electronics
One of the most
widely used
introductory books
on semiconductor
materials, physics,
devices and
technology, Solid

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Devices aims to: 1)
develop basic
semiconductor
physics concepts, so
students can better
understand current
and future devices;
and 2) provide a
sound understanding
of current
semiconductor

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devices and technology, so that their applications to electronic and optoelectronic circuits and systems can be appreciated. Students are brought to a level of understanding that will enable them to read much of the

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new devices and
applications.

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Sound

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Understanding of
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will be able to see
how their
applications to
electronic and
optoelectronic
circuits and systems
are meaningful.* Inco

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incorporate the Basics of
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Conduction
Processes in Solids:
Most of the
commonly used
semiconductor terms
and concepts are
introduced and
related to a broad
range of devices.

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Recombination of
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Device Fabrication
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Capacitor; MOS
Transistor;
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is appropriate for
anyone interested in
semiconductor
devices for integrated

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text for practicing
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a detailed treatment
of the common
microwave elements

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found in modern
microwave
communications
systems. The
treatment is thorough
without being
unnecessarily
mathematical. The
emphasis is on
acquiring a
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understanding of the

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and s-parameter
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chart and related
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Broadband and low-
noise amplifier design
Mixer theory and
design Microwave

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whole is edited by

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circuit design.

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the solid state
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that are
fundamental to
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book. The main devices that comprise semiconductor integrated circuits are covered in a clear manner accessible to the wide range of scientific and engineering disciplines that are impacted by this

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audience is
becoming
increasingly
important as the
field of electronic
materials and
devices becomes
more
interdisciplinary,
with applications in
biology, chemistry

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and electro-mechanical devices (to name a few) becoming more prevalent. Updated and state-of-the-art advancements are included along with emerging trends in electronic devices and their applications. In addition, an

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appendix containing the relevant physical background will be included to assist readers from different disciplines and provide a review for those more familiar with the area. Readers of this book can expect to derive a solid

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foundation for understanding modern electronic devices and also be prepared for future developments and advancements in this far-reaching area of science and technology.

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Theory And Practice
Of Solid-State
Devices And
Circuits, The
Relevant Topics Are
Explained In Words
And Descriptions
Free Of
Cumbersome
Mathematics.
Comprising Three

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Parts, Part 1 Of The Book Deals With Solid-State Devices, With Emphasis On Special Semi-Conductor Devices. Part 2 Of The Book Covers A Very Wide Range Of Circuits, Both Analog And Digital, In Which The Properties Of Solid- State Devices

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Are Exploited. Part
3 Of The Book On
Solid-State Clinic
Bridges The Gap
Between Theory
And Practice. The
Illustrative Method
Of Approach Has
Been Adopted; Each
Illustration Intended
To Bring Home An
Idea And To Build
Understanding Step

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Of A.C. And D.C.
Theory.

This Solution
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companion volume
of the book,
Fundamentals of
Solid-State
Electronics,
provides the

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solutions to selected problems listed in the book. Most of the solutions are for the selected problems that had been assigned to the engineering undergraduate students who were taking an introductory device core course using

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this book. This Solution Manual also contains an extensive appendix which illustrates the application of the fundamentals to solutions of state-of-the-art transistor reliability problems which have been taught to advanced undergraduate and

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graduate students.

This book is also
available as a set
with Fundamentals
of Solid-State
Electronics and
Fundamentals of
Solid-State
Electronics — Study
Guide.

Solid State Pulse
Circuits
Fundamentals of

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Engineering 881.51,
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25-March 1, 1985 :
Lecture Notes

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a Four Day Short
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22-25, 1983 :
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*The progress
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the-art in the*

*areas of
microwave
solid-state
devices and
circuits are
presented.*

*Treated
specifically
is the*

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*performance of
most solid-
state devices,
both available
and predicted.
The microwave
aspects of
integrated
circuits are
examined
tutorially and
a number of*

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(Author) .

*Solid-State
Devices and
Applications
is an
introduction
to the solid-
state theory
and its
devices and*

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applications.

*The book also
presents a
summary of all
major solid-
state devices
available,
their theory,
manufacture,
and main
applications.
The text is*

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*divided into
three
sections. The
first part
deals with the
semiconductor
theory and
discusses the
fundamentals
of semiconduct
ors; the kinds
of diodes and*

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*techniques in
their
manufacture;
the types and
modes of
operation of
bipolar
transistors;
and the basic
principles of
unipolar
transistors*

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*and their
difference
with bipolar
transistors.
The second
part talks
about the
kinds of
integrated
circuits and
their future
developments;*

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amplifiers,
Circuits, 1st
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Edition
their

*fundamentals
and different
types; and the
principles and
categories of
oscillators.*

*The third part
discusses the
applications*

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*of solid-state
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equivalent
circuits; and
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fundamentals
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applications
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*book is a good
read for
technicians
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*and various
microwave circuits
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