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STUDENT

EDITION

17th edition

Keith Brindley

A Heinemann Newnes Book

Radio and Electronics Engineer's Pocket Book

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Heinemann Professional Publishing

Heinemann Professional Publishing Ltd
22 Bedford Square, London WC1B 3HH

LONDON MELBOURNE AUCKLAND

First published by George Newnes Ltd, 1940
Thirteenth edition 1962
Fourteenth edition 1972
Fifteenth edition 1978
Reprinted 1979, 1980, 1982 (twice, with additions), 1983
Sixteenth edition 1985
Seventeenth edition first published by
William Heinemann Ltd, 1987
Reprinted 1988

ISBN 0 434 90183 0

Typeset by Vision Typesetting, Manchester
Printed in Great Britain by
Butler & Tanner Ltd, Frome and London

Preface

Radio and electronics reference books are, generally, quite specific in nature; often covering such narrow and detailed aspects that they are of use to only a minority. Those few books which cover more than this tend not to allow easy reference to specific details, and are expensive. My intention in revising this book was to cater for the needs of most people with interests in radio and electronics related areas, while making it easy to locate the required information – at an affordable price. I hope I have succeeded.

My main criterion in choosing what to include and what to discard has been, 'What do *I* look up?' I have tried to include, therefore, *anything* of relevance to radio and electronics referred to in literature. In this respect, a number of tables of units, conversion factors, symbols etc., are newly included. On the other hand, anything for which a calculator is better used, has been discarded.

Keith Brindley

Contents

Abbreviations and symbols

Many abbreviations are found as either capital *or* lower case letters, depending on publishers' styles. Symbols should generally be standard, as shown.

A	Ampere or anode
ABR	Auxiliary bass radiator
a.c.	Alternating current
A/D	Analogue to digital
ADC	Analogue to digital converter
Ae	Aerial
a.f.	Audio frequency
a.f.c.	Automatic frequency control
a.g.c.	Automatic gain control
a.m.	Amplitude modulation
ASA	Acoustical Society of America
ASCII	American Standard Code for Information Interchange
a.t.u.	Aerial tuning unit
AUX	Auxiliary
a.v.c.	Automatic volume control
b	Base of transistor
BAF	Bonded acetate fibre
B & S	Brown & Sharpe (U.S.) wire gauge
b.p.s.	Bits per second
BR	Bass reflex
BSI	British Standards Institution
C	Capacitor, cathode, centigrade, coulomb
c	Collector of transistor, speed of light
CB	Citizen's band
CCD	Charge coupled device
CCIR	International Radio Consultative Committee
CCITT	International Telegraph and Telephone Consultative Committee
CCTV	Closed circuit television
chps	Characters per second
CPU	Central processor unit
CTD	Charge transfer device
CLK	Clock signal
CrO_2	Chromium dioxide
CMOS	Complementary metal oxide semiconductor
c.w.	Continuous wave
D	Diode
d	Drain of an f.e.t.
D/A	Digital to analogue
DAC	Digital to analogue converter
dB	Decibel
d.c.	Direct current
DCC	Double cotton covered
DCE	Data circuit-terminating equipment
DF	Direction finding
DIL	Dual-in-line
DIN	German standards institute
DMA	Direct memory access
DPDT	Double pole, double throw
DPST	Double pole, single throw

DTE	Data terminal equipment
DTL	Diode-transistor logic
DTMF	Dual tone multi-frequency
DX	Long distance reception
e	Emitter of transistor
EAROM	Electrically alterable read only memory
ECL	Emitter coupled logic
e.h.t.	Extremely high tension (voltage)
e.m.f.	Electromotive force
en	Enamelled
EPROM	Erasable programmable read only memory
EQ	Equalisation
ERP	Effective radiated power
EROM	Erasable read only memory
F	Farad, fahrenheit or force
f	Frequency
Fe	Ferrous
FeCr	Ferri-chrome
f.e.t.	Field effect transistor
f.m.	Frequency modulation
f.r.	Frequency response or range
f.s.d.	Full-scale deflection
f.s.k.	Frequency shift keying
G	Giga (10^9)
g	Grid, gravitational constant
H	Henry
h.f.	High frequency
Hz	Hertz (cycles per second)
I	Current
IB	Infinite baffle
i.c.	Integrated circuit
IF	Intermediate frequency
IHF	Institute of High Fidelity (U.S.)
I^2L (HL)	Integrated injection logic
i.m.d.	Intermodulation distortion
i/p	Input
i.p.s.	Inches per second
k	Kilo (10^3) or cathode
K	Kilo, in computing terms ($= 2^{10} = 1024$), or degrees Kelvin
L	Inductance or lumens
l.e.d.	Light emitting diode
l.f.	Low frequency
LIN	Linear
LOG	Logarithmic
LS	Loudspeaker
LSI	Large scale integration
l.w.	Long wave (approx. 1100–2000 m)
M	Mega (10^6)
m	Milli (10^{-3}) or metres
MHz	Megahertz
m.c.	Moving coil
mic	Microphone
MOS	Metal oxide semiconductor
MPU	Microprocessor unit
MPX	Multiplex
m.w.	Medium wave (approx. 185–560 m)
n	Nano (10^{-9})

NAB	National Association of Broadcasters
Ni-Cad	Nickel-cadmium
n/c	Not connected; normally closed
n/o	Normally open
NMOS	Negative channel metal oxide semiconductor
o/c	Open channel; open circuit
o/p	Output
op-amp	Operational amplifier
p	Pico (10^{-12})
PA	Public address
PABX	Private automatic branch exchange
PAL	Phase alternation, line
p.a.m.	Pulse amplitude modulation
PCB	Printed circuit board
PCM	Pulse code modulation
PLA	Programmable logic array
PLL	Phase locked loop
PMOS	Positive channel metal oxide semiconductor
P.P.M.	Peak programme meter
p.r.f.	Pulse repetition frequency
PROM	Programmable read only memory
PSS	Packet SwitchStream
PSTN	Public Switched Telephone Network
PSU	Power supply unit
PTFE	Polytetrafluoroethylene
PU	Pickup
PUJT	Programmable unijunction transistor
Q	Quality factor; efficiency of tuned circuit, charge
R	Resistance
RAM	Random access memory
RCF	Recommended crossover frequency
RIAA	Record Industry Association of America
r.f.	Radio frequency
r.f.c.	Radio frequency choke (coil)
r.m.s.	Root mean square
ROM	Read only memory
RTL	Resistor transistor logic
R/W	Read/write
RX	Receiver
S	Siemens
s	Source of an f.e.t.
s/c	Short circuit
SCR	Silicon-controlled rectifier
s.h.f.	Super high frequency
SI	International system of units
S/N	Signal-to-noise
SPL	Sound pressure level
SPST	Single pole, single throw
SPDT	Single pole, double throw
SSI	Small scale integration
s.w.	Short wave (approx. 10–60 m)
s.w.g.	Standard wire gauge
s.w.r.	Standing wave ratio
T	Tesla
TDM	Time division multiplex
t.h.d.	Total harmonic distortion
t.i.d.	Transient intermodulation distortion
TR	Transformer