


MODERN  
DICTIONARY  
of  
**ELECTRONICS**

SEVENTH EDITION

REVISED AND UPDATED

**Rudolf F. Graf**

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#### Library of Congress Cataloging-in-Publication Data

Graf, Rudolf F.

Modern dictionary of electronics / Rudolf F. Graf. — 7th ed.,  
revised and updated.

p. cm.

ISBN 0-7506-9866-7 (alk. paper)

1. Electronics — Dictionaries. I. Title

TK7804.G67 1999

621.381'03 — dc21

99-17889

CIP

#### British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

The publisher offers special discounts on bulk orders of this book.

For information, please contact:

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10 9 8 7 6 5 4 3 2 1

Typeset by Laser Words, Madras, India

Printed in the United States of America

to the signal power applied in a given direction,  $4\pi$  intensity to the total power. The term is also applied to

ground between units that main source of power to or terminal of the terminal or circuit a power supply and often returned (i.e., power-supply

**efficiency**—1. A measure of the speaker can absorb without distortion. In speaker systems will vary depending on the signal is applied. 2. The component, which determines used safely without adverse

ic integrated circuit that signal-level digital logic al processing or interface, er devices. The power IC the prevalent small-signal wer IC is more specifically that operates at 2 or more

interface in which certain s perform the same func- menu and then selecting an t in a transmission system, easure of the steady-state easure of an arbitrarily sen as a reference. An ac voltmeter calibrated

e wires conducting electric other. ee PLT.

power attenuation. 1. Ratio input circuit of a transducer cified load under specified alled watt loss. In the cir- ring current or voltage, the nominal full-scale indica- example, wattmeters, the stated value of current or

r—Ratio of the maximum evelope of an amplitude- rage value to its average en the modulating signal negative peaks.

power in watts delivered by as a speaker. 2. Amplifier nannels operating, after a od that brings amplifier working temperature.

**is watts**)—In an ampli- maximum harmonic dis- tone (sine-wave) input. onverting power from an apply into alternating- or suitable for supplying the electronic device.

device for controlling the ically as a function of the

imum power that can be vice for a specified period.

**power ratio**—Ratio of the power output to the power input of a device. Usually expressed as the number of decibels loss or gain.

**power relay**—1. A relay that functions at a pre-determined value of power. It may be an overpower relay, an underpower relay, or a combination of both. 2. General-purpose relay with high ratings, generally 10 to 20 amperes or greater. Some relays in this category may be open frame in that they are not protected with individual dust covers; they are covered with a common dust cover in the end-use equipment.

**power response**—The frequency-response capabilities of an amplifier running at or near its full rated power.

**power semiconductor device**—Solid-state device capable of handling 1 watt of power or more at room temperature. Included are rectifiers, transistors, and thyristors.

**power spectral density function**—A measure of the power distribution of a signal with respect to frequency.

**power-speed product**—The product of a semiconductor device's propagation delay and its power dissipation.

**power supply**—1. A unit that supplies electrical power to another unit. Generally, a circuit that accepts alternating current and converts it into direct current that is regulated precisely enough to drive electronic circuits and that maintains a constant voltage output within limits. For most electronics, the source of power is line voltage (117 V to 220 V, 60 Hz). Most electronic circuits today require low-voltage dc, typically 12 V or less. At present there are three different design approaches to providing this regulated dc: the series or linear regulated supply, the ferroresonant supply, and the switching regulated supply. 2. Energy source that provides power for operating electronic apparatus.

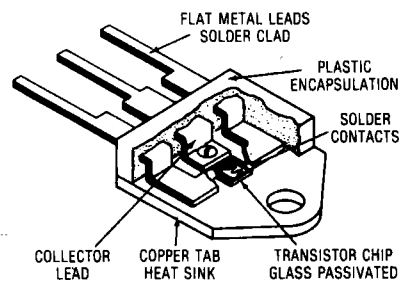
**power-supply rejection ratio**—The ratio of the change in input offset voltage of an operational amplifier to the change in power-supply voltage that causes it.

**power switch**—Often called an on-off switch. The switch that connects or disconnects a radio receiver, transmitter, or other equipment from its power line.

**power switchboard**—Part of a switch gear consisting of a panel or panels on which the switching-control, measuring, protective, and regulatory equipment is mounted. The panel or panel supports also may carry the main switching and interrupting devices and their connections.

**power transformer**—A transformer used for raising or lowering the supply voltage to the various values required by vacuum-tube plate, heater, and bias circuits.

**power transistor**—1. A transistor designed to handle large currents and safely dissipate large amounts of power. 2. A transistor that can dissipate more than



Power transistor.

1 watt of power. General-purpose types are used for low-frequency service (below 3 MHz) as amplifiers, switches, or current regulators. Rf types are used to amplify high-frequency signals (above 3 MHz) that reach up to VHF, UHF, and microwave regions. 3. A transistor that handles power levels of about 0.25 watt and above. Units handling about 0.25 to 10 watts are called medium-power transistors, whereas high-power transistors are those handling above 10 watts.

**power tube**—An electron tube designed to handle more current and power than a voltage-amplifier tube.

**power winding**—A saturable-reactor winding to which the power to be controlled is supplied. Commonly, the output and power are furnished by the same winding, then termed the output winding.

**Poynting's law**—The transfer of energy can be expressed as the product of the values of the magnetic field and of the components of the electric field that are perpendicular to the magnetic field, and the flow of energy at any point is perpendicular to both fields.

**Poynting's theorem**—The rate of flow of electromagnetic energy into or out of a closed region is at any instant proportional to the surface integral of the vector product of the electric and magnetic intensities.

**Poynting's vector**—1. The vector product of the electric and magnetic intensities at one point and at a given instant in a wave. 2. In remote sensing technology, represents the intensity of energy flow in the direction of wave propagation.

**PPI**—Abbreviation for plan-position indicator.

**PPI repeater**—Also called remote plan-position indicator. A unit that repeats a plan-position indicator at a place remote from the radar console.

**PPI scope**—A cathode-ray oscilloscope arranged to present a PPI display.

**pp junction**—A region of transition between two regions having different properties in a p-type semiconductor material.

**p+ region**—The region created by diffusing into a silicon crystal a group III element, which creates a deficiency of electrons or an excess of holes.

**p+ semiconductor**—A p-type semiconductor with an extremely large excess mobile hole concentration.

**p+-type material**—Heavily doped p-type material, formed by introducing acceptor impurities into a silicon substrate. Conduction takes place by the movement of the holes.

**PPM**—Abbreviation for pulse-position modulation.

**ppm**—Abbreviation for parts per million.

**PPM/AM**—Amplitude modulation of a carrier by pulses that are position modulated by data.

**pps**—Abbreviation for pulses per second.

**practical system of electrical units**—A system in which the units are multiples or submultiples of the units of the centimeter-gram-second electromagnetic system.

**praetersonic**—The higher region of the sonic spectrum.

**praetersonics**—The propagation and signal processing of acoustic waves in solids at frequencies that extend into the microwave region.

**preamplifier**—1. An amplifier that primarily raises the output of a low-level source so that the signal may be further processed without appreciable degradation in the signal-to-noise ratio. A preamplifier may also include provision for equalizing and/or mixing. 2. Also known as control amplifier or control center. A switching, amplification, and equalization component designed to select input signals, amplify them by amounts from 0 to 60 dB, and deliver an output voltage compatible with the input requirements of a power amplifier.