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DICTIONARY

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ENGINEERING

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P

P commonly used symbol for power in watts or milliwatts.

P_{DC} common symbol for DC power in watts.

P_{input} common symbol for power input to a device in watts.

P_{load} common symbol for power delivered to the load.

P_{ref} common symbol for power reference level in watts or milliwatts.

p-channel MOSFET a MOSFET where the source and drain are composed of heavily doped p-type semiconductor regions in a n-type surface. Holes form drain-source current when the applied gate and substrate potentials invert the n-type surface between them.

P-I-N photodiode a photodiode (detector) in which a layer of intrinsic (undoped) material is added between the p-n junction. This has the effect of increasing the amount of incident optical power absorbed in the device and hence the efficiency in converting optical power into electrical current.

p-n junction (1) a junction between regions of the same bulk material that differ in the concentration of dopants, n-type on one side and p-type on the other. The diode is based on a single p-n junction.

(2) metallurgical interface of two regions in a semiconductor where one region contains impurity elements that create equivalent positive

charge carriers (p-type) and the other semiconductor region contains impurities that create negative charge carriers (n-type).

P-well a region of p-type semiconductor located at the surface of a n-type substrate (or larger N-well) usually created in order to contain n-channel MOSFETs.

P1dB acronym for 1 dB compression power. This gives a measure of the maximum signal power level that can be processed without causing significant signal distortion or saturation effects. Technically, this refers to the power level at the input or the output of a component or system at which the saturation of active devices like transistors causes the gain to be compressed by 1 dB from the linear gain.

PAC learning a supervised learning framework in which training examples x are randomly and independently drawn from a fixed, but unknown, probability distribution on the set of all examples. Each example is labeled with the value $f(x)$ of the target function to be learned. A PAC (probably, approximately correct) learning algorithm is one which, on the basis of a finite number of examples, is able, with high probability, to learn a close approximation to the target function.

package in MMIC technology, die or chips have to ultimately be packaged to be useful. An example of a package is the T07 “can.” The MMIC chip is connected within the can with bond wires connecting from pads on the chip to lead pins on the package. The package protects the chip from the environment and allows easy connection of the chip with other components needed to assemble an entire system, such as a DBS TV receiver.

packed decimal a data format for the efficient storage and manipulation of real numbers, similar to BCD, with digits stored in decimal form, two per byte.