

Gray Meyer Analog Integrated Circuits Solutions

Widlar current source

mirror Wilson current source PR Gray, PJ Hurst, SH Lewis & RG Meyer (2001). Analysis and design of analog integrated circuits (4th ed.). John Wiley and Sons

A Widlar current source is a modification of the basic two-transistor current mirror that incorporates an emitter degeneration resistor for only the output transistor, enabling the current source to generate low currents using only moderate resistor values.

The Widlar circuit may be used with bipolar transistors, MOS transistors, and even vacuum tubes. An example application is the 741 operational amplifier, and Widlar used the circuit as a part in many designs.

This circuit is named after its inventor, Bob Widlar, and was patented in 1967.

Field-effect transistor

Gray; PJ Hurst; SH Lewis; RG Meyer (2001). Analysis and design of analog integrated circuits (Fourth ed.). New York: Wiley. pp. §1.5.2 p. 45. ISBN 978-0-471-32168-2

The field-effect transistor (FET) is a type of transistor that uses an electric field to control the current through a semiconductor. It comes in two types: junction FET (JFET) and metal-oxide-semiconductor FET (MOSFET). FETs have three terminals: source, gate, and drain. FETs control the current by the application of a voltage to the gate, which in turn alters the conductivity between the drain and source.

FETs are also known as unipolar transistors since they involve single-carrier-type operation. That is, FETs use either electrons (n-channel) or holes (p-channel) as charge carriers in their operation, but not both. Many different types of field effect transistors exist. Field effect transistors generally display very high input impedance at low frequencies. The most widely used field-effect...

Radiation hardening

rad-hard processes are available. Bipolar integrated circuits generally have higher radiation tolerance than CMOS circuits. The low-power Schottky (LS) 5400 series

Radiation hardening is the process of making electronic components and circuits resistant to damage or malfunction caused by high levels of ionizing radiation (particle radiation and high-energy electromagnetic radiation), especially for environments in outer space (especially beyond low Earth orbit), around nuclear reactors and particle accelerators, or during nuclear accidents or nuclear warfare.

Most semiconductor electronic components are susceptible to radiation damage, and radiation-hardened (rad-hard) components are based on their non-hardened equivalents, with some design and manufacturing variations that reduce the susceptibility to radiation damage. Due to the low demand and the extensive development and testing required to produce a radiation-tolerant design of a microelectronic...

Pigging

aircraft to record the information; it was basically a highly customized analog tape recorder. Until recently, tape recording (although digital) was still

In pipeline transportation, pigging is the practice of using pipeline inspection gauges or gadgets, devices generally referred to as pigs or scrapers, to perform various maintenance operations. This is done without stopping the flow of the product in the pipeline.

These operations include but are not limited to cleaning and inspecting the pipeline. This is accomplished by inserting the pig into a "pig launcher" (or "launching station")—an oversized section in the pipeline, reducing to the normal diameter. The launching station is then closed and the pressure-driven flow of the product in the pipeline is used to push the pig along the

pipe until it reaches the receiving trap—the "pig catcher" (or "receiving station").

Divex

Managing Director Derek Clarke and providing subsea engineering design solutions, was also suffering from the effects of the 1987 downturn. A merger between

JFD (formerly Divex Ltd) is a subsidiary of James Fisher & Sons (LSE: FSJ) is a Scottish provider of diving equipment and related services.

Royal Australian Navy School of Underwater Medicine

Commander Rex Gray to service in Underwater Medicine. Dr. Gray was an anaesthetist and accepted this commission on 20 February 1961. Dr. Gray was trained

The Royal Australian Navy School of Underwater Medicine (RANSUM) is an instructor-led training course based at Sydney, Australia.

Smartphone

television. Smartphones typically feature metal-oxide-semiconductor (MOS) integrated circuit (IC) chips, various sensors, and support for multiple wireless communication

A smartphone is a mobile device that combines the functionality of a traditional mobile phone with advanced computing capabilities. It typically has a touchscreen interface, allowing users to access a wide range of applications and services, such as web browsing, email, and social media, as well as multimedia playback and streaming. Smartphones have built-in cameras, GPS navigation, and support for various communication methods, including voice calls, text messaging, and internet-based messaging apps. Smartphones are distinguished from older-design feature phones by their more advanced hardware capabilities and extensive mobile operating systems, access to the internet, business applications, mobile payments, and multimedia functionality, including music, video, gaming, radio, and television...

Cyborg

operating the organ in an oxygen and nutrient-rich solution. The stretchable material and circuits of the apparatus were first constructed by Professor

A cyborg (, a portmanteau of cybernetic and organism) is a being with both organic and biomechatronic body parts. The term was coined in 1960 by Manfred Clynes and Nathan S. Kline. In contrast to biorobots and androids, the term cyborg applies to a living organism that has restored function or enhanced abilities due to the integration of some artificial component or technology that relies on feedback.

Edward D. Thalmann

11–80. Archived from the original on April 15, 2013. Retrieved 2008-03-16. Gray, C. G.; E. D. Thalmann. (1980). "Manned evaluation of the pre-production

Capt. Edward Deforest Thalmann, USN (ret.) (April 3, 1945 – July 24, 2004) was an American hyperbaric medicine specialist who was principally responsible for developing the current United States Navy dive tables for mixed-gas diving, which are based on his eponymous Thalmann Algorithm (VVAL18). At the time of his death, Thalmann was serving as assistant medical director of the Divers Alert Network (DAN) and an assistant clinical professor in anesthesiology at Duke University's Center for Hyperbaric Medicine and Environmental Physiology.

Underwater vision

Nilsson, D. (2012). Animal Eyes. Oxford University Press. ISBN 9780199581146. Meyer-Rochow, V. Benno; Stewart, Duncan (1996). "Review of larval and postlarval

Underwater vision is the ability to see objects underwater, and this is significantly affected by several factors. Underwater, objects are less visible because of lower levels of natural illumination caused by rapid attenuation of light with distance passed through the water. They are also blurred by scattering of light between the object and the viewer, also resulting in lower contrast. These effects vary with wavelength of the light, and color and turbidity of the water. The vertebrate eye is usually either optimised for underwater vision or air vision, as is the case in the human eye. The visual acuity of the air-optimised eye is severely adversely affected by the difference in refractive index between air and water when immersed in direct contact. Provision of an airspace between the cornea...

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