ADVANCED LINEAR DEVICES, INC.

Advanced Linear Devices Introduces Industry-First Nano-Power Precision P-Channel MOSFET Device to Meet Always-On Power Demands

The monolithic, quad P-channel MOSFET array offers industry's most precise temperature tracking characteristics while simplifying bias circuitry.

SUNNYVALE, Calif. January 18, 2022 - Advanced Linear Devices, Inc. (ALD), a design innovation leader in analog semiconductors, today announced the first-to-market nano-power precision P-Channel EPAD® MOSFET array. The matched pair circuit is designed for the next generation of products requiring extremely low power applications and mostly-on operation. This MOSFET simplifies bias circuitry while optimizing power usage. Market segments using the MOSFET array are energy harvesting systems, automotive, medical, transportation, robotics, and any wireless product. These markets rely on self-contained power circuits and require very low power operation over long periods of time.

This P-channel MOSFET array offers precision-matched Gate Threshold Voltages of -.20V ± 0.02V. This also enhances I/O signal operating ranges, particularly in extremely low operating voltage environments. Precise offset voltages (V_{OS}) within 1mV are typical. Low minimum operating voltage is less than 0.2V, and ultra-low operating current is less than 1nA. It also features matched transconductance and output conductance.

The MOSFET is designed for switching and amplifying applications in -0.40V to -8.0V (±0.20V to ±4.0V) systems where low input bias current, low input capacitance and fast switching speeds are required. The ALD technology enables portable devices that run on trickle charge and energy harvesting power sources, as well as DC/DC converters in electronics equipment, ranging from microprocessors to communications and from computer power supplies to power plants. Typical application examples are differential amplifier input stages, backup power circuits, power failure detectors, sensors in security equipment and portable devices, high-side and sample-and-hold switches, discrete analog switches/multiplexers and many other applications across multiple industry sectors that require an always available backup battery.

Matched and tracked temperature characteristics of the MOSFET pair also distinguish ALD's EPAD® MOSFET from others available in the market today. The unique temperature tracking means that paired N- and P-channel devices automatically adjust to changing temperatures to ensure stable, uninterrupted operation.

"The temperature tracked and matched MOSFET is important for precision operations, but designers also need to know that the precision is going to be held stable with time and temperature," observed Robert Chao, president and founder of ALD.

The ALD310702A/ALD310702 joins ALD's EPAD® Matched Pair MOSFET family and is available in quad arrays as two separate matched pairs. This P-channel version complements the popular ALD110802 N-channel high-precision devices already available from ALD.

About Advanced Linear Devices, Inc.
Advanced Linear Devices, Inc. is a design innovation leader in analog semiconductors, specializing in the development and manufacture of precision CMOS linear integrated circuits, including analog switches, A/D converters and chipsets, voltage comparators, operational amplifiers, energy harvesting systems, analog timers, and conventional and precision EPAD® MOSFET transistors.