LTC News for Immediate Release

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Tiny 3x3mm Silicon Oscillator Operates from –40°C to 125°C

MILPITAS, CA – March 23, 2005 – Linear Technology's newest family of silicon oscillators, the LTC6905-xxx, generate a fixed frequency clock output from 20MHz to 133MHz. These oscillators provide a simple, compact and robust timing solution for FPGAs, CPLDs, microprocessors and DSPs. Eliminating the external trim components, these precision oscillators minimize board space and maximize accuracy.

It's a familiar story. Just as vacuum tubes, relays and core memory were transformed by solid state technology, silicon oscillators offer big advantages over traditional resonating elements. Linear Technology's silicon fabrication and assembly ensures that the LTC6905-xxx family is inherently immune to shock and vibration, a key advantage over crystals and ceramic resonators. Typical canned oscillators are challenged by long startup, duty cycle drift, and significant power usage. The LTC6905-xxx improves on all of these features with a consistent startup (100us typical), low duty cycle variation (+/-2.5%) and half of the power consumption (12mA Max at 100MHz). Furthermore, the LTC6905-xxx can operate over the full automotive temperature range (-40°C to 125°C).

The LTC6905-xxx series is offered in a small ThinSOT™ package. These parts operate with a single 2.7V to 5.5V power supply and provide a rail-to-rail, CMOS output. An output enable function is provided to disable the output and eliminate pulse slivers when re-enabled.

"The combination of ruggedness, size, power, and performance addresses a demand in the oscillator market that was previously tough to meet," according to Doug LaPorte, design section lead for Linear Technology.

The LTC6905-xxx family is available with a master clock frequency of 133MHz, 100MHz, 90MHz, or 80MHz. An internal three-state divider (DIV input) allows for division of the master clock by 1, 2 or 4 providing a wide range of possible frequencies. For non-standard frequencies, the LTC6905-xxx can be factory trimmed to any output between 2.2 and 170MHz. A resistor programmable version is also available for applications requiring factory or field adjustment to any frequency from 17MHz to 170MHz

(more...)

All versions are in full production, with pricing starting at $1.15 each in 1,000-piece quantities.

Summary of Features: LTC6905

- Frequency Error: ±1.5% Max (0-70°C, 2.7V-3.6V)
- 12mA Max @100MHz
- 100us Startup Time
- 50% ±2.5% Duty Cycle
- Timing Jitter: 50ps at 170MHz
- Rise Time: 0.5ns, CL = 5pF
- ±20ppm/°C Temperature Stability
- CMOS Output Drives 500Ohm Load (VS = 3V)
- Operates from a Single 2.7V to 5.5V Supply
- Low Profile SOT23 (ThinSOT) Package

COMPANY BACKGROUND: Linear Technology Corporation was founded in 1981 as a manufacturer of high performance linear integrated circuits. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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