

New High-Speed Oscillator Designed to Improve Application Reliability

April 1 2005

Pericom Semiconductor Corporation, a worldwide preferred supplier of high-performance integrated circuits and SaRonix frequency control products, today announced a revolutionary breakthrough in crystal clock oscillator technology that improves reliability at higher operating frequencies.

The new S1614XP and S1613XP product families combine Pericom integrated circuit technology with SaRonix quartz crystal design and manufacturing techniques, resulting in a crystal clock oscillator that is designed to achieve a significant improvement in long-term reliability. Operating at 2.5V or 3.3V, with low jitter LVCMOS clock frequencies from 100 MHz up to 160 MHz, the S1614XP and S1613XP products lower customer costs while meeting the demanding performance and reliability criteria of today's high-speed networking, server, and storage applications. Customers will also benefit from the available IBIS models (input/output buffer information specification), a value-added service not widely available from the oscillator industry.

“The S1614XP and S1613XP products represent a robust solution to the Achilles Heel of high-speed overtone oscillators – reliability,” explains Brandon Ogilvie, SaRonix Product Marketing Manager for Pericom. “Due to the electrical and mechanical characteristics of the ultra-thin quartz element used in most high-frequency oscillators today, high frequency oscillators fail more often than those operating below 100 MHz. This directly translates into costly field returns for equipment vendors in the high-speed networking, telecom, server, and storage

markets. To remedy this condition, these new XP products use a thicker quartz blank paired with a non-PLL, patent-pending IC design.”

The S1614XP and S1613XP products are housed in hermetically sealed, 5x7mm ceramic packaging that is footprint compatible with clock oscillators used today. Operating at 2.5V or 3.3V, and compatible with LVCMOS/LVTTL signals, the clocks may be specified to operate from 100 to 160 MHz with total stability better than ± 25 ppM over commercial conditions, or ± 50 ppM over industrial operating conditions. The product includes an output disable function to facilitate in-circuit testing. Due to innovative design, the patent-pending clock circuit achieves 0.5ps 1-sigma RMS computed phase jitter with thicker, more reliable quartz crystals than those used in contemporary devices while consuming less than 30mA.

The S1614XP and S1613XP products are now available for prototype and production requirements. Common operating frequencies include 100, 106.25, 125, 133, 150, 155.52, and 156.25 MHz. Ordering lead times range from stock to eight weeks, and prices start around \$1.25 for 10,000 pieces (price varies with exact specifications). The device is available on tape and reel for automated pick-and-place assembly and is compatible with lead (Pb)-free re-flow soldering guidelines.

Citation: New High-Speed Oscillator Designed to Improve Application Reliability (2005, April 1) retrieved 11 May 2024 from <https://phys.org/news/2005-04-high-speed-oscillator-application-reliability.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.