



Quartz Crystal Technology GmbH

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Product News

New 100 MHz OCXOs Provide Low Phase Noise (LPN) and Low G-Sensitivity (LGS)

By the usage of self-manufactured noise-optimized TO-packaged 3rd and 5th overtone SC-cut crystals and noise-minimized electronic circuits KVG's engineers succeeded in designing new RF OCXOs what provide very low phase noise (LPN) and low G-sensitivity (LGS) extending the range of applications for those kind of small packaged OCXOs.

For a 100 MHz output signal the phase noise at 100 Hz from the carrier is better than -135 dBc/Hz (optional -138 dBc/Hz); at 1 kHz offset it is already better than -157 dBc/Hz (optional -162 dBc/Hz) and at 10 kHz offset you can get -170 dBc/Hz (optional -175 dBc/Hz); the so-called 'noise floor' at 100 kHz from the carrier and higher is better than -175 dBc/Hz (optional -180 dBc/Hz).

In addition to the excellent phase noise performance the new OCXOs provide low dynamic G sensitivity of better than 1 ppb/g (optional 0.5 ppb/g) for all three axis. The frequency stability vs. temperature is in the range of ± 20 ppb ($\pm 2 \times 10^{-8}$) in the temperature range of -20 to +70 °C. Extended temperature range versions are available on request.

The long term stability (aging) is better than ± 3 ppm within 15 years. The parts are either housed with an hermetically sealed European standard package size of 36 mm x 24 mm x 20 mm for the thru-hole part; or comes with a small sized non-hermetical 25 mm x 22 mm x 15 mm SMD package assembled on tape & reel.

The new Low Phase Noise RF OCXOs are dedicated to many communication technology applications what need excellent short term stability and phase noise performance – like reference clock for microwave signal sources, professional satellite receivers, radar applications and many measurement and medical applications (magnetic resonance imaging). Due to the low G sensitivity the hermetically sealed package option is suitable for applications with demanding environmental requirements (shock, vibration, humidity, dust), as it is requested for several military or avionic applications.

KVG Quartz Crystal Technology GmbH is the leading German manufacturer of crystals, crystal filters and oscillators and have been one of the industrie's technology leaders for high precision quartz crystal products for more than 60 years.

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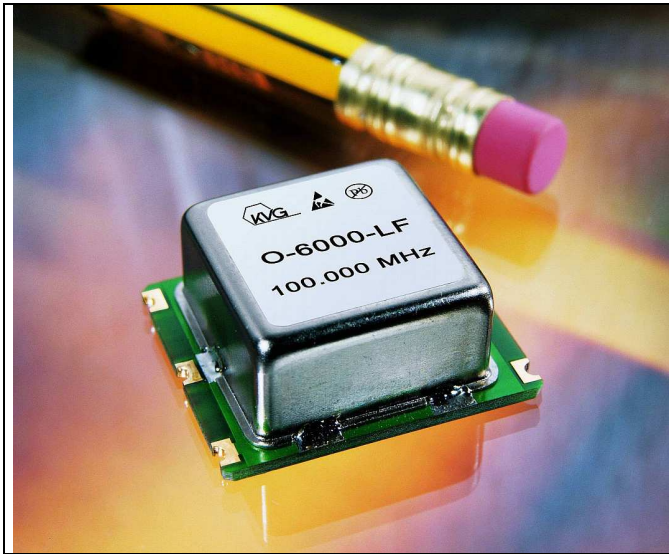
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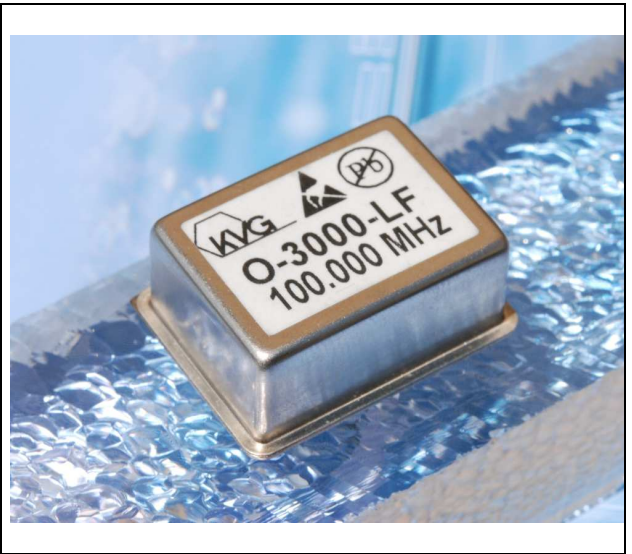
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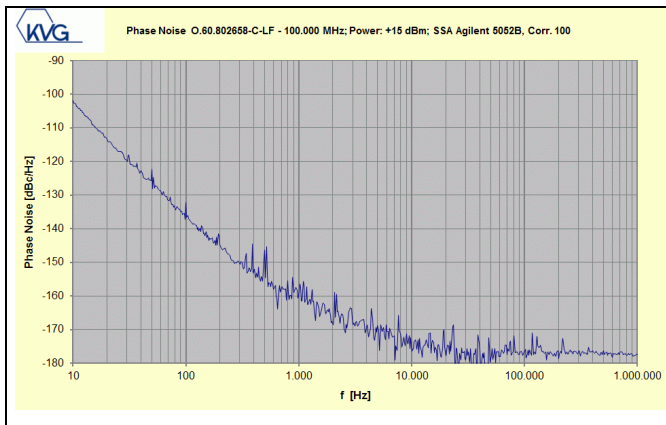
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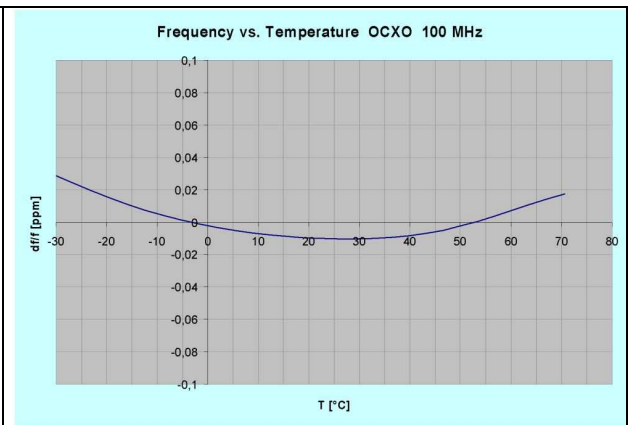
Low Phase Noise SMD OCXO



Hermetically Sealed Package



Phase Noise Plot 100 MHz OCXO



Frequency vs. Temperature

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