

Developed the World's Smallest Low-voltage Temperature-compensated Crystal Oscillator*

Daishinku Corp. (President: Minoru Iizuka) is pleased to announce that our company has developed the world's smallest temperature-compensated crystal oscillator (TCXO), which operates at a low voltage of 1.2 V, in the 1612 size (1.6 mm × 1.2 mm)—the first of its kind in the industry.

◆ Background of the development

In the overall market for wearable and mobile devices, including smartwatches, extension of the battery life is required for longer operation on a single charge. For example, given that the operating voltage of mobile devices tends to further decrease from the current 1.8 V in order to reduce power consumption, there has been growing demand for miniaturized and lower-voltage electronic components. Regarding semiconductors, the core voltage must be decreased in line with the die shrink. This leads to a lower voltage of I/O and peripheral circuits. Thus, lower-voltage operation is also required for crystal oscillators. We quickly identified these market needs and developed the world's smallest TCXO in the 1612 size in terms of low-voltage operation at 1.2 V.

◆ Effectiveness of the product

This product maintains highly accurate frequency characteristics while significantly reducing power consumption, contributing to improved accuracy of GPS/GNSS receivers. For example, in smartwatches, the product can extend battery life by up to 20% while minimizing GPS/GNSS errors.

◆ Future developments

In line with die shrink in semiconductors, low-voltage TCXOs used in GPS/GNSS receivers are expected to be used in various applications, including mobile devices and loss prevention tags, in addition to the wearable market. We aim to steadily secure its share in various markets by focusing on design-in activities for low-voltage TCXOs, for which demand is growing.

As a pioneer of high-accuracy quartz crystal devices with one of the largest global market shares in TCXOs, we will continue to develop products which meet market needs and contribute to the realization of a convenient and prosperous society.

* Based on a survey conducted by Daishinku in April 2025

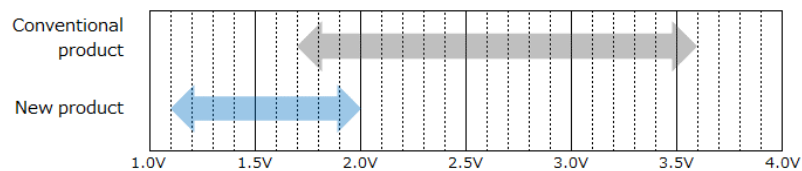
[Applications]

Wearable devices, including smartwatches

[Features]

- World's smallest TCXO
- Capable of low-voltage operation, realizing a 20% reduction in power consumption (compared to our conventional product)

Operating power supply voltage range



Comparison of power consumption

	Power consumption* [mW]	
Conventional product	2.16	20% down
New product	1.73	

* 26 MHz typ. Value

[Schedule of sample shipment / mass production]

Samples available for immediate shipment / Mass production: from May 2025

Please refer to the URL and QR code below for product images and specifications.

[URL]

https://ftp.kds.info/data_sheet/DSB1612_211SLD_ds_en.pdf

[2D code]



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