

October 12, 2020

Nihon Dempa Kogyo Co., Ltd.
Representative Director and President
Hiromi Katoh

NX1612SD 76.8MHz thermistor crystal unit mass production started.

Nihon Dempa Kogyo Co., Ltd. began mass production of a crystal unit with a built-in thermistor (NDK part number: EXS00A-CS12311) at 76.8MHz with a NX1612SD (1.6×1.2×0.65mm-size) in June.

Qualcomm Technologies Corporation of the United States, a global chipset manufacturer, is developing chipsets (for Qualcomm® Snapdragon™ 690,750G for 5G Mobile Platform) to be installed mainly in smartphones for 5G, and since this product is the first to meets and passes the required specifications, we began mass production as an approved crystal unit manufacturer authorized by the company.

With the shift to 5G of mobile communications, the increasing frequency of clock sources used in chipsets has resulted in an increasing demand for low phase noise. In particular, in order to handle with the carrier frequency band such as millimeter waves, there was a concern that the increase in the number of internal multipliers will result in a higher noise component, resulting in reception sensitivity degradation and communication efficiency degradation due to degradation of the modulation accuracy (signal phase and amplitude shift).

As one of the countermeasures, the phase noise is improved by the reduction of the multiplication frequency by making the reference oscillation source inside the device to a higher frequency from 38.4MHz to 76.8MHz. In order to achieve further noise reduction, the drive level of the crystal resonator must be raised in addition to increasing the frequency, and the temperature characteristics must be maintained at a high stability.

To satisfy these high-difficulty requirement, we are the first to be certified for Qualcomm's SoC smartphones by using high-quality synthetic quartz grown in-house and by processing crystal blank with high precision using our own photolithography processing technology.

The smartphone market for 5G is expected to expand rapidly in the future, and we plan to ensure stable supplies of this product while expanding sales.

We will continue to contribute to the realization of a safe, secure and comfortable society through our quartz device and crystal application equipment businesses.

[Product Appearance]



[Mass production]

Mass production has been in progress since June 2020.

[Specifications / Characteristics]

Model name	NX1612SD
Dimensions	1.6 x 1.2 x 0.65mm

ELECTRICAL CHARACTERISTICS

Nominal Frequency	76.8MHz
Frequency Tolerance (+25 +/- 3 degC)	-10 to +22ppm
Frequency/Temperature Characteristics (-30 to +85 degC)	+/-12ppm
Operating Temperature Range / Storage Temperature Range	-30 to +105 degC / -40 to +105 degC
Equivalent Series Resistance	Max. 30Ω
Load Capacitance	7pF
Temperature Resistance (at +25 degC)	100KΩ +/-1%
Temperature B-Constant (+25/+50 degC)	4250K +/-1%

For more information on the product, please contact:

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