

About Quartz Devices

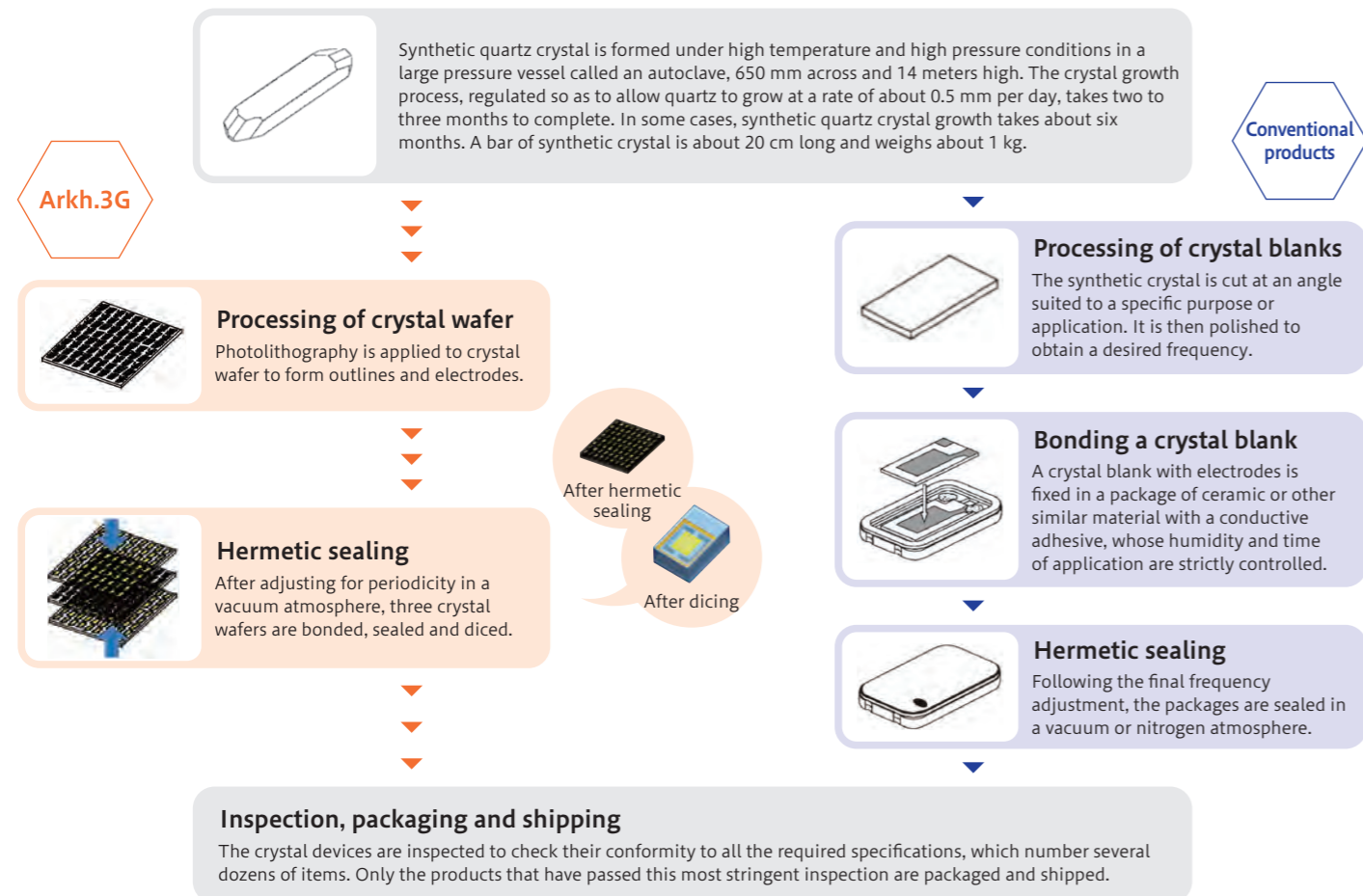


We have established a highly efficient production system that ensures a stable supply of constantly high-quality crystal devices. Our integrated production system, from the development of highly pure synthetic crystal to the cutting and polishing of crystal and product assembly, rapidly meets the needs of customers all over the world.

All About Quartz Devices

Quartz produces an electric charge when it is compressed. This is called piezoelectricity. Quartz also oscillates (i.e., is deformed) when a voltage is applied to it. This phenomenon, called inverse piezoelectricity, which is marked by the production of stable and regular signals, is applied to various devices that support our daily activities. Quartz crystal devices are used in such familiar electronic devices as automobiles, high-resolution audio-visual equipment and products, and smartphones and other information and communication devices. Smartphones enable us to instantly communicate with people all over the world and obtain desired information from anywhere at any time. Smartphones transmit and receive voice and textual information via electromagnetic waves formed from reference signals that are stably and accurately transmitted by quartz crystal devices.

Quartz Device Construction Process

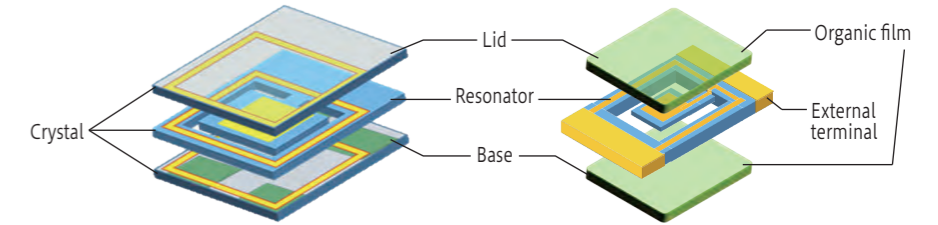
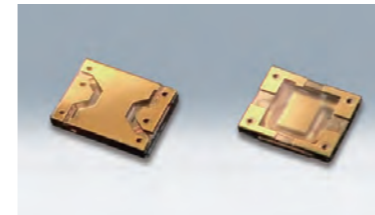


Products

Next-generation Crystal Devices "Ark. series"



Ark.3G



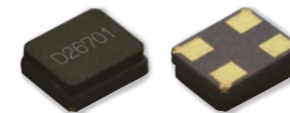
Structure of the Arkh.3G

Structure of the Arkh.4G

In contrast to the conventional structure where crystal blanks are held in a ceramic package by using a conductive adhesive, the Arkh.3G is arranged in a three-layer structure, the host of which is crystal. The lineup includes crystal resonators, simple packaged crystal oscillators (SPXO) and temperature compensated crystal oscillators (TCXO). The concept of this design was evaluated and won the Good Design Award in 2019. Further, we will continue to expand our product lineup for the "Ark Series", such as the "Ark.4G" crystal devices for which cost reduction has been achieved by replacing the upper and lower layers of the three-layer structure of the three quartz crystal wafers bonded of Arkh.3G, excluding the resonator layer, with organic films, and the downsized and power saving "Ark.5G" oven-controlled crystal oscillators (OCXO) containing an Arkh.3G oscillator, and will provide our customers with new value.

Crystal Resonators

A high-frequency resonator with good temperature characteristics. Comes in various types and sizes and available for a wide variety of application.



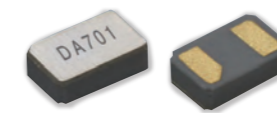
Monolithic Crystal Filters

A device featuring a frequency selective function that enables particular frequency components to pass through. Most commonly used for radio communication equipment.



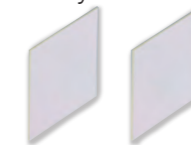
Tuning Fork Crystal Resonators

A low-frequency resonator with low power consumption, mainly employed for clocks and the clock function of various types of devices.



Optical Products

An optical devices featuring double refraction, such as Optical Low Pass Filters (OLPF) and wave plates. Capable of controlling spectral characteristics by dielectric multilayer film.



Crystal Oscillators

A driver IC-equipped oscillator module. Available in a variety of types: simple packaged crystal oscillator (SPXO), voltage controlled crystal oscillator (VCXO), temperature compensated crystal oscillator (TCXO), etc.



MEMS Oscillators

An oscillator with the oscillation part forming by silicon, combining MEMS technology and integrated-circuit technology. It is suitable for downsizing of package.

