

Quartz monitor crystal(6MHZ)



1. Product model:

SUNDA-9999(Gold) 、 SUNDA-000168(Alloy)

2. Technical characteristics:

Physical characteristics	Electrical characteristics
Sensor material : α Quartz	Resonant frequency : 5.980-5.995 MHz
Cut angle : 35 degrees 15 minutes (AT)	Q value: 2.4 million or more
Profile : 3 diopter flat convex	Resonant impedance : < 15 Ω
Surface roughness: <10 microns	Contact resistance : < 15 Ω
diameter : 13.95 \pm 0.05mm	
Electrode: gold	

3. Working principle:

Quartz monitor crystal is an electronic component that utilizes the piezoelectric effect of quartz (which generates a charge like a battery when squeezed) and produces a high-precision oscillation frequency. When the crystal is connected to the battery, if the battery is quickly switched, the crystal will vibrate, and as the film accumulates on the crystal surface, it will slow down the vibration of the quartz.

There is a mathematical relationship between the thickness of the film and the vibration frequency and film density. The monitor can be used to calculate the change in the number of vibrations per second and calculate the thickness of the coating based on the received data.

4. Application scope:

Gold-plated quartz monitor crystals have low contact resistance, high chemical stability and good deposition properties for monitoring the coating process of low stress materials (metals like gold, silver and copper), and high stress materials (oxide materials). The alloy quartz is suitable for monitoring the coating process of high stress materials.

5. Precautions for use:

- a. Avoid touching the center of the crystal directly with your hands during the process. Any grease, dirt, dust, or scratches can affect the crystal's ability to detect film thickness
- b. If possible, it is recommended to clean the crystals with absolute ethanol first. After crystals are installed, the filtered dry nitrogen or oil-free air spray gun can be used to clean the crystal surface. This way, it can remove any kind of dust or debris that is contaminated with crystals during the installation process.
- c. Since quartz is a highly sensitive material, it is not recommended for reuse.