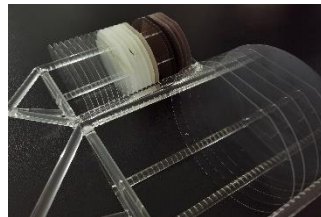
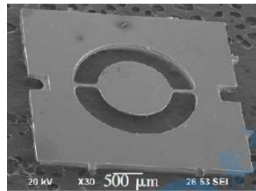
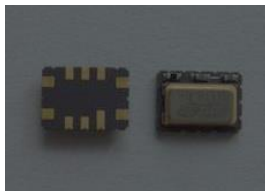
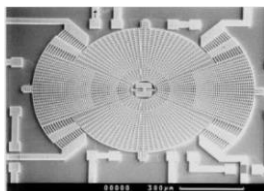
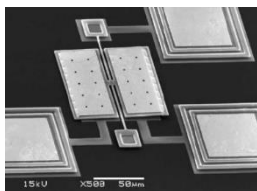


压电石英晶片 Single Crystal Quartz Wafer/Blanks



压电石英晶片由单晶石英晶体加工而成，具有良好的正/逆压电效应，广泛应用于定时频率控制、频率选择及 QMEMS 等方向。尖端应用包括：压控晶振（VCXO）、温补晶振（TCXO）、恒温晶振（OCXO）等。

Single crystal quartz wafers/blanks are made of synthetic quartz crystal. It has good piezoelectric effect and is widely used in timing frequency control, frequency selection and QMEMS. Cutting-edge applications include VCXO, TCXO, OCXO etc.



材料特性 Material Characteristics

Material 材料	Piezo / Optical grade 压电级和光学级单晶石英
Q-Value 活力值	Min 1.8×10^6 , 2.4×10^6 to 3.0×10^6 IEC standards
ECD 腐蚀隧道密度	Max 2 / c m ² , 10 / c m ² , Max 30 / c m ² , Max 100 / c m ² , Max 300 / c m ² ; Swept Quartz
Inclusions Density 包裹体	Ia, Ib, I, II, III Grades
Swept 电清洗	Both Pure Z and Y Bar available, with or without Swept quartz (电清洗材料)

加工能力 processing capacity - blanks

Cuts Type (orientation) 切型	X, Y, Z, AT, BT, CT, ET, DT, GT, NT, FC, SC, IT, AC, BC, ST, TS MT, NT RT, LC..., etc 可协商切角
Angle Tolerance(±) 角度公差	Theta Angle: $\pm 5''$, $\pm 10''$, $\pm 15''$, $\pm 30''$, $\pm 1'$, $\pm 2'$, ..., etc. Phi Angle: $\pm 5'$, $\pm 10'$, $\pm 15'$, $\pm 30'$, ..., etc.
Size 尺寸	Round (3.0mm ~ 8")/ Square (1.6x1.6mm ~ 48x48mm or larger)/ SMD 长方形 (1.2x2.4mm Above)
Size Tolerance(±) 尺寸公差	$\pm 0.01\text{mm}$, $\pm 0.005\text{mm}$, $\pm 0.0005\text{mm}$, according to size
Frequency/ Thickness 频率	1 Mhz up to 54Mhz for AT-Cut Fundamental (AT 切基频); Up to 70Mhz by Etching (腐蚀后)
Flat 基准片	Per requested: the flat shall be perpendicular to X axis within ± 10 deg 平台垂直于 X 轴 $\pm 10^\circ$
Surface Finishing 表面处理	#1000(9u); #2000(7u); #3000(5u); #4000(3u) (Sic); Polished(Cerium oxide) & etched Std
Overtone 泛音	Fundamental 基频; Third Overtone (3rd); Fifth Overtone (5th)
Contouring (dioptric) 凸面	Plano-Convex (平凸片): 0.5 dioptric ~ 10 dioptric Bi-Convex (双面凸片): 10 dioptric ~ 15 dioptric

加工能力 processing capacity - wafers

Diameter 直径	3" (76.2mm)	4" (100mm)	6" (150mm)	8" (200mm)
Thickness 厚度	0.08mm Min-up	0.10mm Min-up	0.20mm Min -up	0.35mm Min-
Primary Flat 主平台	22mm	32mm	42.5mm	57.5mm or notch
Surface 表面处理	LTV (5mmx5mm)	$< 1.5\mu\text{m}$	TTV	$< 1.5 \sim 3\mu\text{m}$
	Bow	$-30 < \text{bow} < 30$	Warp	$< 40\mu\text{m}$
	Surface Type	SSP / DSP	Edge Criteria	R=0.2mm or Bullnose
	Polished side Ra	$< 0.5\text{nm}$ or per requested	Back Side Criteria	General is $0.2 \sim 0.5\mu\text{m}$ or as customized