

## We are committed to the supply of all types of substrate wafers to the microelectronics industry

## Single Crystal Quartz Wafers

Our abundance experience at growing and mass production for piezo grade quartz . We are equipped with advanced facilities at Crystal growing, wafer lapping, polishing and checking

Our R&D is active at developing and researching from big material to process 8" quartz wafer or more.



## **Specifications for Piezo grade application**

Material	Quartz Crystal			
<b>Cutting Angle</b>	X/Y/Z/AT32、33、36/BT/ST42.75°-cut etc			
Diameter/size	3" (76.2mm)	4" (100mm)	6"(150mm)	8"(200mm)
Tol(±)	<0.20 mm			
Thinnest Thickness	0.08mm Min	0.10mm Min	0.20mm Min	0.35mm or more
Primary Flat	22mm	32mm	42.5mm	57.5mm
LTV (5mmx5mm)	<1µm			
TTV	<3μm			
Bow	-30 <bow<30< th=""></bow<30<>			
Warp	<40μm			
PLTV(<0.5um)	≥95%(5mm*5mm)			
<b>Orientation Flat</b>	All available			
<b>Surface Type</b>	Single Side Polished /Double Sides Polished			
Polished side Ra	<0.5nm			
<b>Back Side Criteria</b>	General is 0.2-0.5μm or as customized			
<b>Edge Criteria</b>	R=0.2mm or Bullnose			
Material Property	ECD	Better than grade 4		
	Inclusion	Better than grade II		
	Q-Value	Better than grade C		
Wafer Surface	Particles ¢>0.3 μ m	<= 30		
Criteria	Scratch , Chipping	None		
	Defect	No edge cracks, scratches, saw marks, stains		
Packaging	Qty/Wafer box	25pcs per box		

## HANGZHOU FREQCONTROL ELECTRONIC TECHNOLOGY LTD.

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