

### 深圳市晶科鑫实业有限公司

Shenzhen Crystal Technology Industrial Co., Ltd

## APPROVAL SHEET

CUSTOMER P/N:		
TYPE:	CRYSTAL	
DESCRIPTION:	圆柱 JU2*6 38.000KHZ 12.5PF ±20PPM -40~85°C	
P N/ SJK:	6K838000F12UB	
ENVIRONMENTAL:	<input checked="" type="checkbox"/> RoHS <input checked="" type="checkbox"/> REACH <input checked="" type="checkbox"/> HF <input type="checkbox"/> PAHS <input type="checkbox"/> other	
REVISION:	A1 2015-4-8	MOQ: 1000pcs/real
MSL:	Levels 1	

SIGNATURE					
SUPPLIER			CUSTOMER		
Issue	Check	Approve	QA	Check	Approve
SJK			Signature		
FAE_EMAIL			Date		
Date			Approve:	<input type="checkbox"/> accept	<input type="checkbox"/> unaccepted
Note:					

# CRYSTAL RESONANCER



## **SERIES 6K6 / 2X6MM TUNING FORK WATCH CRYSTAL**

### **1. FEATURE**

- Small size

### **2. APPLICATIONS**

- Microprocessor Systems
- Consumer Electronics

### **3. ELECTRICAL SPECIFICATIONS**

Frequency	38.000KHz
Frequency Tolerance (at 25°C)	±20 ppm
Load Capacitance(C <sub>L</sub> )	12.5.0PF
ESR	35 KΩ Max
Turnover Temperature	25 ± 2°C
Frequency Temperature Curve	-0.04ppm/°C <sup>2</sup> MAX
Operating Temperature Range	-40 °C to +85°C
Storage Temperature Range	-40 °C to +85 °C
Shunt Capacitance (C <sub>0</sub> )	0.9pF Typ
Dynamic Capacitance (C <sub>1</sub> )	2.0fF Typ
Driver Level (Typical)	1 μW Max
Insulation Resistance	100MΩ MIN at DC100V±15V
Aging @25°C 1 <sup>st</sup> year (Max)	±3ppm/year max

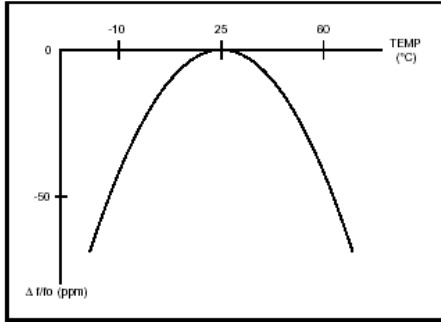
**REMARK:** SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. PLEASE CONFIRM WITH OUR SALES ENGINEER.

# CRYSTAL RESONANCER

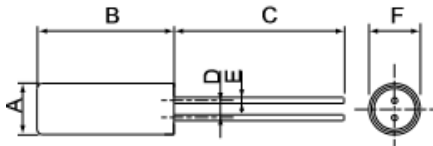


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### 4. FREQUENCY VS TEMPERATURE CURVE



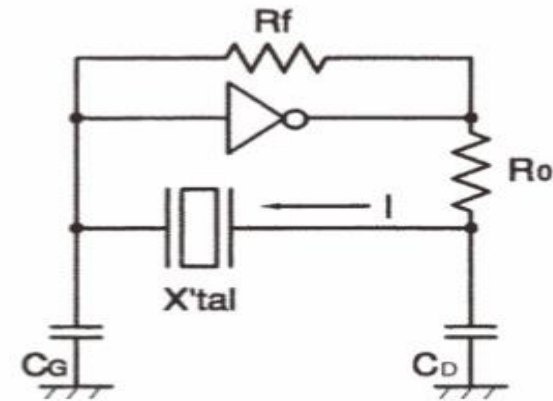
### 5. PACKING AND DIMENSIONS (Units: mm)



Type	A	B	C	D	E	F
6K6	∅2.0	6.0±0.3	7.0±0.3	0.7±0.2	0.2±0.1	∅2.0±0.1
6K8	∅3.0	8.0±0.3	10.0±0.3	1.1±0.2	0.3±0.1	∅3.0±0.1



### 6. OSCILLATION CIRCUIT



$$C_L = \frac{C_g \times C_d}{C_g + C_d} + C_s$$

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### 7. Environment-proof · Mechanical property

No	Item	Specifications	Conditions	
1	High temperature storage	$\Delta f/f = \pm 5 \times 10^{-6}$	After storage under 85°C for 500 hrs, measure at room temperature.	1
2	Low temperature storage	$\Delta f/f = \pm 5 \times 10^{-6}$	After storage under -40°C for 500hrs, measure at room temperature	1
3	High temperature and high humidity storage	$\Delta f/f = \pm 5 \times 10^{-6}$	After storage under 60°C ± 2°C, 90 to 95% RH for 500 hrs, measure at room temperature.	1
4	Thermal shock resistance	$\Delta f/f = \pm 5 \times 10^{-6}$	Measured at room temperature after 20 cycles. -25°C ↔ +80°C for 30 minutes.	1
5	Mechanical shock resistance	$\Delta f/f = \pm 5 \times 10^{-6}$	Measure after free drop of the RESONATOR three times from the height of 75cm onto a wooden board.	2
6	Vibration resistance	$\Delta f/f = \pm 5 \times 10^{-6}$	Amplitude 1.5mm and 10~60Hz with cycle time 2~3 minutes in 3 direction (X, Y, and Z axis) each for 2 hrs.	2
7	Resistance to soldering heat	$\Delta f/f = \pm 5 \times 10^{-6}$	Measured at room temperature after immersing the lead wire in a soldering bath of 300°C ± 10°C for 5 seconds up to a position where it is 2mm away from the root of the plug.	1
8	Tensile strength of lead wire	$\Delta f/f = \pm 5 \times 10^{-6}$	Apply a load of 500g for 30 seconds in the lead wire's axial direction.	2
9	Bending strength of lead wire	$\Delta f/f = \pm 5 \times 10^{-6}$	Bending cycle : 0° → 45° → 0° → 45° → 0°	2
10	Solderability of lead wire	A minimum 95% of the area to be coated with solder	Apply resin-flux contained-solder to a soldering iron of 280°C ± 5°C for 5 seconds.	2

Note:

1. The above tests no. 1 to 9 must be conducted independently (not series tests)
2. \*1: Measure after 24 hours soak at room temperature .
3. \*2: Measure after 2 hours soak at room temperature .

### 8. Precautions

- (1) Temperature for soldering the lead wire shall not exceed 300°C and the soldering time shall be within 5 seconds.
- (2) Position to be soldered : Solder only the position where the lead wire is 1.0mm away from the glass seal.  
Do not solder the case.
- (3) Cutting, bending and correction of lead wire: The glass seal shall be free of any crack or other damage which may deteriorate the characteristics of RESONATORS.