



CHEQUERS ELECTRONIC (CHINA) LIMITED

捷嘉電子(中國)有限公司

APPROVAL SHEET

Manufacturer: Chequers Electronic (China) Limited		Customer:	
Part no.	C38TDTn212030-32.768K	Customer part no.	-
Part name	Quartz crystal unit	Spec. no.	-
Total page (Includes this page)	7	Issued date	14 th August 2015

This product is compliant to:

RoHS
Directive 2011/65/EU

R REACH (151 SVHCs)
Regulation (EC) No. 1907/2006

For customer use

Approved by

For internal use only

Prepared by	Checked by	Approved by
 06-Oct-14 Wong	 06-Oct-14 Frankie	 06-Oct-14 Nelson

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CHEQUERS ELECTRONIC (CHINA) LIMITED
捷嘉電子(中國)有限公司

**Quartz Crystal Unit
Specification**

Part No.: C38TDTn212030-32.768K

<This product is RoHS and REACH compliant>

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1. Scope

This specification shall cover the characteristics of the quartz crystal unit

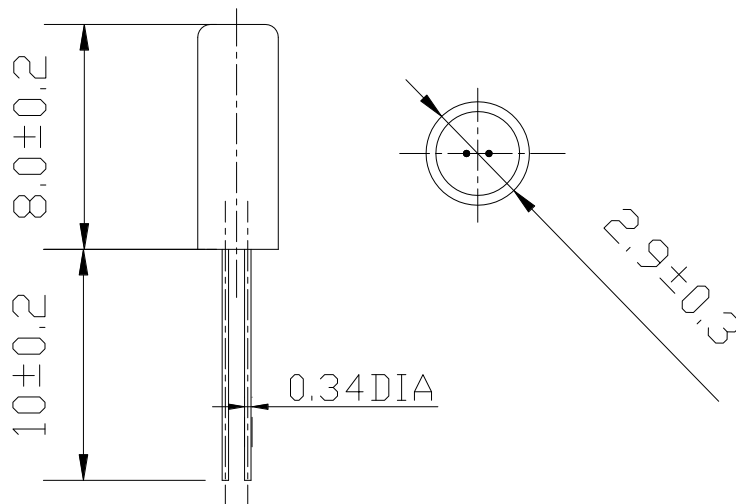
2. Specification no.: -

3. Part no.: C38TDTn212030-32.768K

4. Electrical specification

4-1	Nominal frequency (Fo)	32.7680 KHz
4-2	Holder Type	JU-38 (3x8mm cylindrical type)
4-3	Tolerance (25°C)	±10ppm
4-4	Temperature Coefficient	-0.036±0.006 ppm/°C (typical)
4-5	Drive level	1μW max.
4-6	Loading capacitance	12.5pF
4-7	Equivalent Series resistance	30KΩ max.
4-8	Insulation resistance	500MΩ min. (D.C. 100V)
4-9	Shunt capacitance	2.0pF typ.
4-10	Motional capacitance	3.50fF typ.
4-11	Q-Factor	40K min.
4-12	Aging (25°C)	±3ppm / year max.
4-13	Operating temperature range	-20°C to +70°C
4-14	Storage temperature range	-40°C to +85°C

5. Dimension



Unit: mm

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6. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

6-1. Humidity

Subject the crystal at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 90% - 95% RH for 96 ± 4 hours Then release the crystal into the room conditions for 1hour prior to the measurement .

6-2. High Temperature Exposure

Subject the crystal to $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 96 ± 4 hours . Then release the crystal into the room conditions for 1hour prior to the measurement .

6-3. Low Temperature

Subject the crystal to $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 96 ± 4 hours . Then release the crystal into the room conditions for 1hour prior to the measurement .

6-4. Mechanical Shock

Drop the crystal randomly onto a concrete floor from the height of 75cm 3 times .

6-5. Temperature Cycling

Subject the crystal to -30°C for 30 min. followed by a high temperature of $+85^{\circ}\text{C}$ for 30 min. Cycling shall be repeated 5times with a transfer time of 15sec. at the room condition . Then release the resonator into the room temperature for 2hours prior to the measurement .

6-6. Vibration

Subject the crystal to vibration for 2hours each in x, y, and z axes with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10-55 Hz .

6-7. Lead Fatigue

1) Pulling Test

Weight along with the direction of terminals without any shock 0.5kg for 10 ± 1 sec.; The crystal shall no evidence of damage and shall fulfill all the initial electric characteristics .

2) Bending Test

Lead shall be subject to withstand against 90 degree bending at its stem. This operation shall be done towards both direction; The crystal shall no evidence of damage and shall fulfill all the initial electric characteristics .

7. REVIEW OF SPECIFICATION

When something get doubtful with this specifications , we shall jointly work to get an agreement .

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8. Packing information (continue)

Package	Dimension LxWxH (cm)	Quantity (pcs)	Weight
Quartz crystal unit	-	1	~ 0.15 g
Plastic bag (small)	-	1000	~ 150.0 g
Inner box	21.0 x 17 x 7	10 Plastic bags (large) = 10000	~ 1595 g

*Please note that the above packing material and dimension given are for reference only. The actual packing material and dimension may vary depending on the actual quantity to be delivered.

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9. Note

9-1 Please contact our sales representatives or engineers before using the products specified in this specification sheet for the following equipment, which require high reliability, and if such equipment fails, which might damage to a third party's life, body or property.

- (i) Aerospace equipment
- (ii) Medical equipment
- (iii) Power plant equipment
- (iv) Transportation equipment
- (v) Traffic control equipment
- (vi) Disaster control / prevention equipment
- (vii) Undersea navigational equipment
- (viii) Data-processing equipment
- (ix) or equipment that requires similar complexity and / or reliability of above equipment

9-2 Product specifications in this specification sheet are as of the date that is printed on. They are subject to change or discontinue without prior notice. Please check with our sales representative or engineers for details.

9-3 When using our products, please do not exceed the requirements and conditions specified in this specification sheet.

9-4 Should there be any doubt when using our products, please consult our sales representative or engineers before using our products.

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