

Lead Free

Document No : TF

Date : 2004/09/21

Page : 1 OF 5

# SPECIFICATIONS

Messrs.

Approved by

Product	CRYSTAL UNIT
Type of Holder	CFS-206
Nominal Frequency	32.768 kHz
Customer's Parts Number	
CITIZEN Parts Number	

Sales           CITIZEN WATCH Co.,LTD Crystal Device Division.  
6-1-12,Tanashi-cho, Nishitokyo-shi, Tokyo, 188-8511,JAPAN

TEL:81-424-67-6214

FAX:81-424-67-8503

Manufacturer   MIYOTA Co.,LTD Crystal Device Division.  
4107-5,Miyota, Miyota-machi, Kitasaku-gun, Nagano,389-0294, JAPAN

TEL:81-267-32-3331

FAX:81-267-32-4960



## 1. Scope

This document contains specifications for the crystal unit to be supplied by MIYOTA Co ,LTD.

- 1.1 If something defined ambiguously or undefined in document happened, the customer and MIYOTA would discuss and take necessary steps by mutual consent
- 1.2 Product test data can't be attached to this document.
- 1.3 This product is not authorized for use as a critical component in life support devices or systems.

## 2. Electrical Specifications

2.1 Nominal Frequency	32.768 kHz
2.2 Operating Temperature Range	-20 to +70 degC
2.3 Storage Temperature Range	-40 to +85 degC
2.4 Frequency Tolerance	+/- 20ppm Max. at 25 degC
2.5 Frequency Tolerance over Operating Temperature Range	Turnover Temp.; 25 +/- 5degC Temp.Coefficient: -0.034 +/- 0.006ppm / degC <sup>2</sup>
2.6 Equivalent Series Resistance	35k ohm Max. at 25 degC
2.7 Insulation Resistance	500M ohm Min./DC100V +/- 15V

## 3. Test Conditions

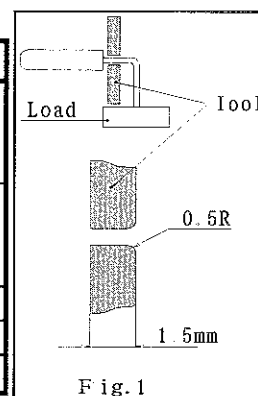
3.1 Load Capacitance	12.5 pF This Load Capacitance has been fixed on customer's request.
3.2 Level of Drive	MAX. 1 Micro W

#### 4. Mechanical and Environmental Tests

Test Name	Test Conditions	Criteria No.
<b>1.Mechanical Tests</b>		
1-1 Shock	Drop 3 times from the height of 75 cm onto hard wooden board with thickness of 3 cm	A
1-2 Vibration	Vibration Frequency : 10~500 Hz, 1.5mm, full wave, or acceleration 10G, Cycle : 1 5 minutes, Direction : X Y.Z Time : 2 hours in each direction, for 6 hours in total.	A
1-3 Lead Pull	Weight : 1.0kg , Time : 30 +/- 5 seconds .	A·C
1-4 Bending Strength	Weight : 0.5kg , Bending Angle : 90 degrees, Bending Count : 2 times .	A·C
1-5 Solderability	After applying RMA flux, dip in solder. Dipping Time : 5 +/- 0 5seconds. Soldering Temperature : 230 +/- 5 degC. Dipping Depth : 2 mm from the edge of terminals of samples.	D
1-6 Resistance to Soldering Heat	Dip in solder. Dipping Time : 10 +/- 0.5 seconds. Soldering Temperature : 260 +/- 5 degC. Dipping Depth : 2mm from the edge of lead-wires of samples	B
1-7 Sealing Tightness	Leak rate shall be measured by using Helium Leak Detector.	E
<b>2.Environmental Tests</b>		
2-1 Storage In Low Temperature	Expose the sample in an inoperative mode to 240 hours at -40 degC.	A
2-2 Storage In High Temperature	Expose the sample in an inoperative mode to 240 hours at +85 degC.	B
2-3 Humidity	Expose the sample in an inoperative mode to 240 hours at +65 degC, and 95%RH.	B
2-4 Thermal Shock	Subject the sample to 5 temperature variation cycles at -40 degC for 30 minutes and +100 degC for the next 30 minutes in each cycle.	A

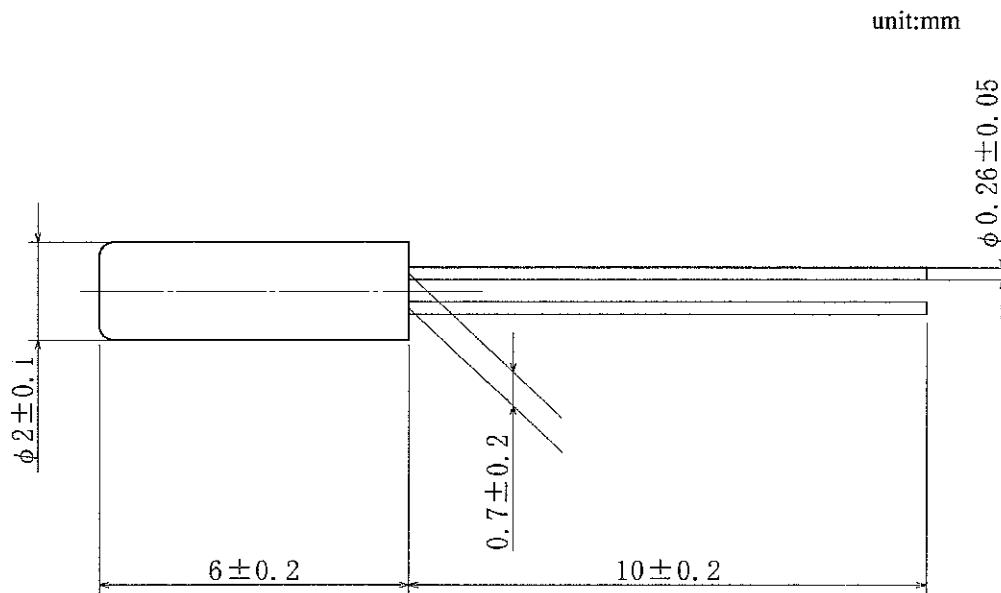
#### Criteria

Criteria No.	Criteria
A	Any variation between the pre- and post-test frequencies shall remain within +/- 5ppm. The equivalent series resistance shall remain within its specified tolerance range after the post-test.
B	Any variation between the pre- and post-test frequencies shall remain within +/- 10ppm. The equivalent series resistance shall remain within its specified tolerance range,after the post-test.
C	After each test, no visible damage, nor the hermetic seal break down.
D	At least 90% of each dipped area shall be covered by fresh solder.
E	$1 \times 10^{-2}$ Micro Pa · m <sup>3</sup> /s Max.



\* Measurements should be taken place at 25 +/- 2 degC after each test, the samples shall left at 25 degC for one to two hours.

## 5. Dimensions



## 6. Marking Standards

Sym1

S,1: Manufacture's ID Code

y: The last digit of production year.

m: Production month (See Table 1)

Table 1

Month	1	2	...	9	10	11	12
Code	1	2	...	9	X	Y	Z

## **7. Packing**

Packing method is taken precautions to prevent damage due to transportation and handling.

## **8. Manufacturer**

(Domestic) MIYOTA CO.,LTD  
4107-5,Miyota,Miyota-machi,Kitasaku-gun,Nagano,389-0294,JAPAN  
Tel:0267-32-3331

(Oversea) MASTER CROWN ELECTRONICS CO ,LTD.  
No.3 BLDG,137,XINXING EN  
ROAD,WUZHOU,GUANGXI,CHINA.  
TEL:774-3863148

\* This manufacture is under the control of MIYOTA CO ,LTD.

## **9. Ozone Depleting Substance (ODS)**

This Product doesn't use the class I ODS at any of production processes, and component parts

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Crystals](#) category:*

*Click to view products by [CITIZEN](#) manufacturer:*

Other Similar products are found below :

[CS325S24000000ABJT](#) [718-13.2-1](#) [MC405 32.0000K-R3:PURE SN](#) [FC-135R 32.7680KF-A3](#) [7A-40.000MAAE-T](#) [7B-27.000MBBK-T](#)  
[FL2000085](#) [9B-15.360MBBK-B](#) [9C-7.680MBBK-T](#) [ASH7K-32.768KHZ](#) [AT-41.600MAGQ-T](#) [BTD1062E05A-513](#) [LFX TAL066198Cutt](#)  
[9C-14.31818MBBK-T](#) [FA-238 50.0000MB30X-K3](#) [FC-12M 32.7680KA-AC3](#) [SSPT7F-9PF20-R](#) [FX325BS-38.88EEM1201](#)  
[LFX TAL065253Cutt](#) [LFX TAL066431Cutt](#) [XT9S20ANA14M7456](#) [XT9SNLANA16M](#) [646G-24-2](#) [7A-24.576MBBK-T](#) [7B-30.000MBBK-T](#)  
[WX26-32.768K-6PF](#) [9B-14.31818MBBK-B](#) [CD1AM](#) [7B-25.000MAAE-T](#) [7A-14.31818MBBK-T](#) [6504-202-1501](#) [6526-202-1501](#) [FA-118T](#)  
[27.1200MB50P-K0](#) [FC-135R 32.7680KA-A3](#) [ABM12-104-37.400MHZT](#) [ABLS-10.000MHZ-D3W-T](#) [BTJ112E01E-513](#) [BTJ722K01C-7067](#)  
[BTL-20-513](#) [TSX-3225 24.0000MF15X-AC](#) [TSX-3225 16.0000MF18X-AC](#) [BTJ120E02C](#) [BTL-12-513](#) [7A-10.000MBBK-T](#) [7A-](#)  
[11.0592MBBK-T](#) [ABM12-103-24.000MHZT](#) [CS325S25000000ABJT](#) [ABM3B-25.000MHZ-B2-X-T](#) [FC-135 32.7680KA-A5](#) [FX0800015](#)