

深圳市炬焯科技有限公司

CHIP SUN TECHNOLOGY CO., LTD.

APPROVAL SHEET



CUSTOMER: _____

DESCRIPTION: SMD3.2*1.5 32.768KHz Quartz Crystal Resonator

MANUFACTURER PART NO.: FTX32.768K7SM3-20D

CUSTOMER PART NO: _____

USED IN MODEL: _____

REVISION A1

承 认 APPROVAL		
工程部 TECHNOLOGY DEPT.	品质部 QUALITY DEPT.	采购部 PURCHASING DEPT.

Date: September 21, 2019



深圳市炬焯科技有限公司

CHIP SUN TECHNOLOGY CO., LTD

地址 ADD: 深圳市龙华新区大浪腾龙路淘金地电子商务孵化基地 B 座 206

Rm. Rm 206, Tower B, Taojindi Building, Tenglong Road, Dalang Street, Longhua
New District, Shenzhen, China

电话 TEL: 86-755-83458767 传真 FAX: 86-755-83459818

网址 WEB ADD: <http://www.chinafronter.com>

E-MAIL: eason@chinafronter.com

<u>Rev</u>	<u>Revise page</u>	<u>Revise contents</u>	<u>Date</u>	<u>Ref.No.</u>	<u>Reviser</u>
A1	ALL	Initial released		N/A	DavidJiang

CHIP SUN TECHNOLOGY CO., LTD.

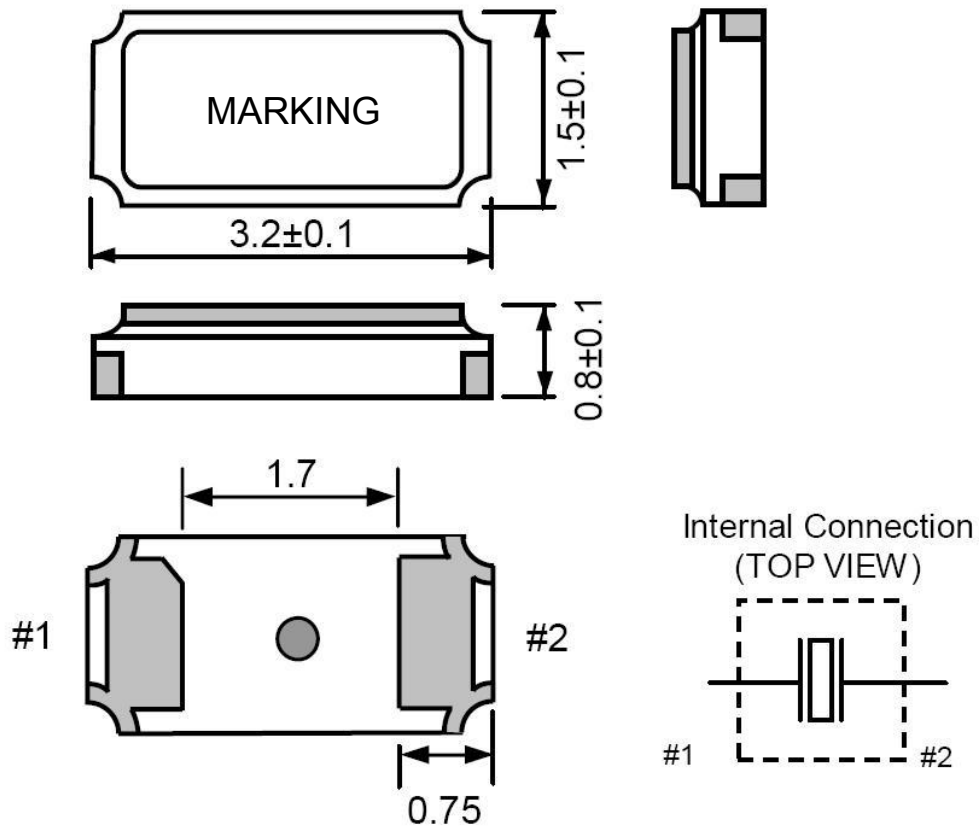
DESCRIPTION	SMD3.2×1.5 32.768KHz ±20ppm 7pF	Page:
DATE	2019-09-21	2 / 9

1. QUARTZ CRYSTAL UNIT SPECIFICATION

- 1.1 Frequency: 32.768KHz
- 1.2 Holder type : SMD3.2×1.5×0.8 mm
- 1.3 Frequency tolerance: ±20ppm at 25°C
- 1.4 Equivalent resistance: 70Kohms Max
- 1.5 Operating temperature range: -40°C To +85°C
- 1.6 Storage temperature range: -55°C To +125°C
- 1.7 Temperature Coefficient -0.04×10⁻⁶/ °C² max
- 1.8 Turn-over temperature:: +25°C±5°C
- 1.9 Loading capacitance (CL) : 7.0pF
- 1.10 Drive level: 0.5uW (1.0 uW Max.)
- 1.11 Shunt Capacitance: 1.0pF Typical
- 1.12 Motional Capacitance: 3.4fF Typical
- 1.13 Insulation resistance : More than 500M ohms
- 1.14 Aging: ±3 ppm/Year Max (+25°C First Year)
- 1.15 Dimensions and marking Refer to page.3
- 1.16 Emboss carrier tape & reel Refer to page.5 and page.6
- 1.17 Note

CHIP SUN TECHNOLOGY CO., LTD.		
DESCRIPTION	SMD3.2×1.5 32.768KHz ±20ppm 7pF	Page:
DATE	2019-09-21	3 / 9

2. DIMENSIONS (Unit: mm)

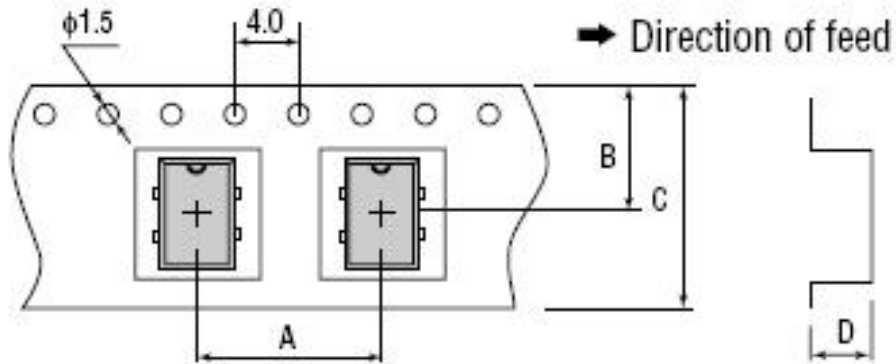


CHIP SUN TECHNOLOGY CO., LTD.

DESCRIPTION	SMD3.2×1.5 32.768KHz ±20ppm 7pF	Page:
DATE	2019-09-21	4 / 9

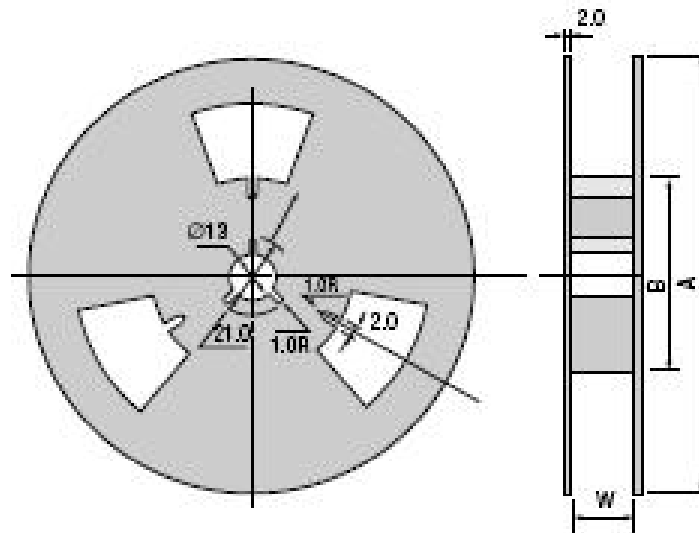
3 CARRIER TAPE & REEL

a.) Dimensions of Carrier Tape



Dimension (Unit: mm)			
A	B	C	D
4.0	7.25	12.0	1.0

b.) Dimensions of Reel



Dimension (Unit: mm)		
A	B	W
$\phi 180$	$\phi 60$	13.0

CHIP SUN TECHNOLOGY CO., LTD.

DESCRIPTION	SMD3.2×1.5 32.768KHz ± 20 ppm 7pF	Page:
DATE	2019-09-21	5 / 9

a.) Storage condition

Temperature: -55deg.C To +125deg.C

Relative Humidity: 80% Max.

b.) Standard packing quantity

3,000PCS / REEL

c.) Material of the tape

Tape	Material
Carrier tape	A- PET
Top tape	Polyester

d.) Label contents

.The type of product

.Our specification No.

.Your Part No.

.Lot No.

.Nominal Frequency

.Quantity

.Our Company Name

Sticks label for every reel.

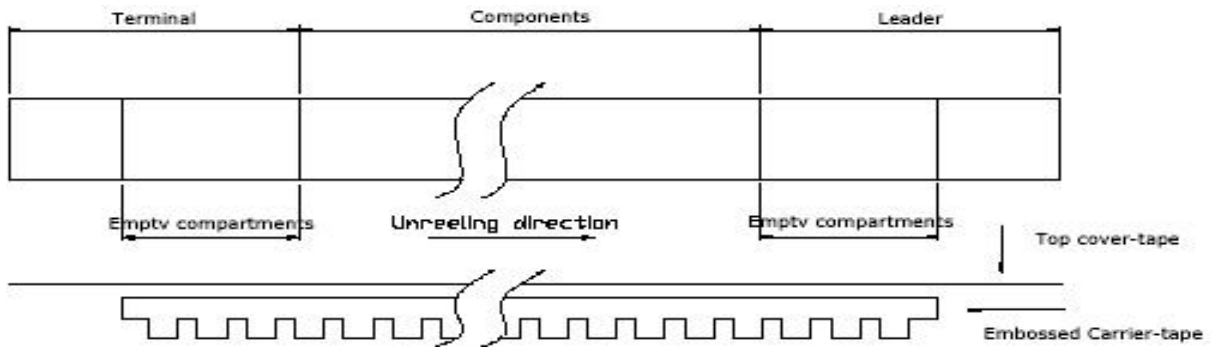
PART NUMBER	
Lot. NO:	
HOLDER TYPE	
FREQUENCY	
REMAKS	
QUANTITY	
CHIP SUN TECHNOLOGY CO.,LTD.	

CHIP SUN TECHNOLOGY CO., LTD.

DESCRIPTION	SMD3.2×1.5 32.768KHz ±20ppm 7pF	Page:
DATE	2019-09-21	6 / 9

e.) Taping dimension

Leader	Cover-tape	The length of cover-tape in the leader is more than 400 mm including empty embossed area.
	Carrier-tape	After all products were packaged, must remain more than twenty pieces or 400 mm empty area, which should be sealed by cover-tape.
Terminal	Cover-tape	The tip of cover-tape shall be fixed temporary by paper tape and roll around the core of reel one round.
	Carrier-tape	The empty embossed area which are sealed by top cover-tape must remain more the 40 mm.



f.) Joint of tape

The carrier-tape and top cover-tape should not be jointed.

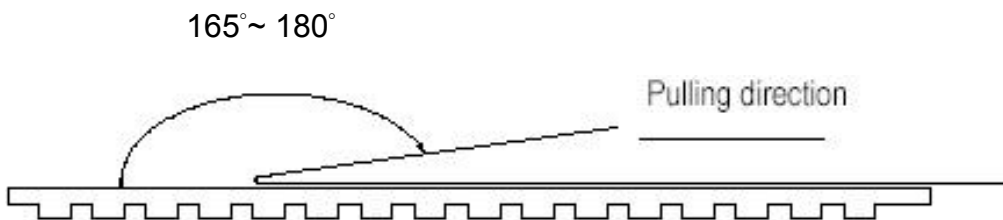
g.) Release strength of cover tape

It has to between 0.1N to 0.7N under following condition.

Pulling direction 165° to 180°

Speed 300mm/min.

Otherwise unless specified.



Other standards shall be based on JIS C 0806-1990.

CHIP SUN TECHNOLOGY CO., LTD.		
DESCRIPTION	SMD3.2×1.5 32.768KHz ±20ppm 7pF	Page:
DATE	2019-09-21	7 / 9

4. Mechanical Endurance: Provided that measurement shall be carried out after letting it alone in the room temperature for 1 hour.

	Test Item	Condition of Test	Performance Requirements
4.1	Shock (Destructive)	Resonator shall be tested after 3 times random drops from the height of 75 cm onto hard wooden board of thickness more than 30 mm.	No visible damage, measured Values shall meet Table 1.
4.2	Vibration (Destructive)	Subject resonator to following vibration Frequency: 10-55Hz Amplitude: 1.50mm Cycle time: 2~3min(10-55-10Hz) Duration: 3 mutually perpendicular Planes in each 2 hours Direction: X, Y, Z	No visible damage, measured Values shall meet Table 1.
4.3	Terminal Strength (Destructive)	Pulling: body of resonator shall be fixed, and 0.5kg of tension weight shall be supplied gradually to axial direction of lead terminals for 30 seconds Bending: body of resonator shall be fixed, And 90 °C bending at a distance of 2.5±0.5 mm from crystal main body shall be given being supplied 250g tension weight. after that, lead terminals shall be straightened gradually. Then, the same bending and straightening shall be supplied to the opposite direction in the same axial.	The lead shall not be broken , measured Values shall meet Table 1.
4.4	Solder Heating (Destructive)	Each lead terminals shall be dipped into the solder melted tank at 350±10 °C for 3±0.5 resonator ,and at 260±10 °C for 10 ± 1 seconds by the same way.	No visible damage, measured Values shall meet Table 1.
4.5	Solder DIP. (Destructive)	Dip the lead in liquid solder for 2± 0.5 seconds, at 230±5 °C and 6.0mm from the root , after this dipping , 90% min. of dipped parts shall be covered with solder.	No visible damage, measured Values shall meet Table 1.
4.6	Leakage (non-destructive)	The resonator is to be soaked in the alcohol and enforced with the pressure of 25N/cm ² for 5 minutes Next , the resonator shall be tested after being taken out and dried with a dryer.	The Ir between the wire and the shell must be more than 500MΩ.

CHIP SUN TECHNOLOGY CO., LTD.

DESCRIPTION	SMD3.2×1.5 32.768KHz ±20ppm 7pF	Page:
DATE	2019-09-21	8 / 9

5. Environmental Endurance: Provided that measurement shall be carried out after letting it alone in the room temperature for 1 hour.

	Item	Conditions	Specifications
5.1	Humidity	Should be satisfied after letting it alone at $+60^{\circ}\text{C}\pm 2^{\circ}\text{C}$ in humidity of 90~95% for 500 hours.	No visible damage, measured Values shall meet Table1.
5.2	Storage in Low Temperature	Should be satisfied after letting it alone at $-40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 500 hours.	No visible damage, measured Values shall meet Table1
5.3	Storage in High Temperature	Should be satisfied after letting it alone at $+85^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 500 hours.	No visible damage, measured Values shall meet Table1
5.4	Temperature Cycle	Should be satisfied after supplying the following temperature cycle (100 cycles). (Refer to Fig-4). Temperature shift from low to high, high to low shall be done in $1^{\circ}\text{C} /\text{min}$.	No visible damage, measured Values shall meet Table1

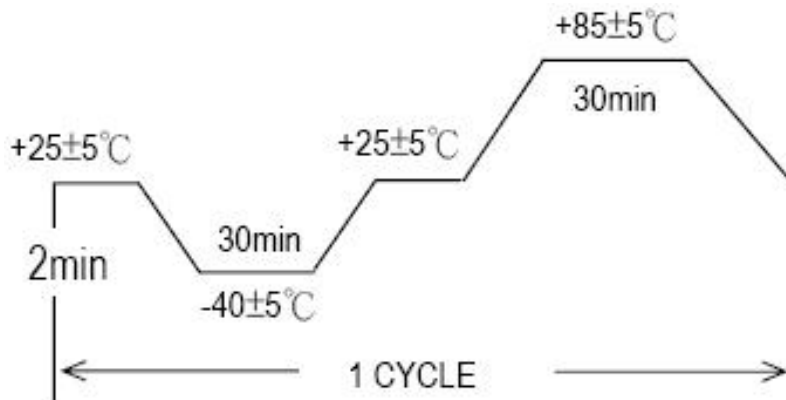


Fig-4

Table 1

Test Item	Specification	Note
Frequency change ($\Delta f/f_0$)	$\pm 5\text{ppm}$	Reference to the initial value
C.I. (ΔR)	15%	Reference to the initial value

CHIP SUN TECHNOLOGY CO., LTD.

DESCRIPTION	SMD3.2×1.5 32.768KHz $\pm 20\text{ppm}$ 7pF	Page:
DATE	2019-09-21	9 / 9