



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
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Product Specifications Approval Sheet

Product Description: Crystal Unit 7.0x1.5mm Tuning Fork 32.768kHz

TST Part No.: TZ0601B

Customer Part No.: _____

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: _____ Ginger Huang *Ginger Huang*

Approved by: _____ Kelly Huang *Kelly Huang*

Date: _____ 02/05/2014

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



TAI-SAW TECHNOLOGY CO., LTD.
SMD 7.0*1.5 32.768KHz Crystal Unit

MODEL NO.: TZ0601B

REV. NO.: 3.0

Revise:

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	05/21/10'	N/A	Ginger Huang
2	P3	Add Electrical Specifications	06/18/12'	ECN-201200193	Ginger Huang
3	P5,6	Change Reel & Tape Dimension	02/05/14'	ECN-201400028	Ginger Huang



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32.768kHz Crystal Unit

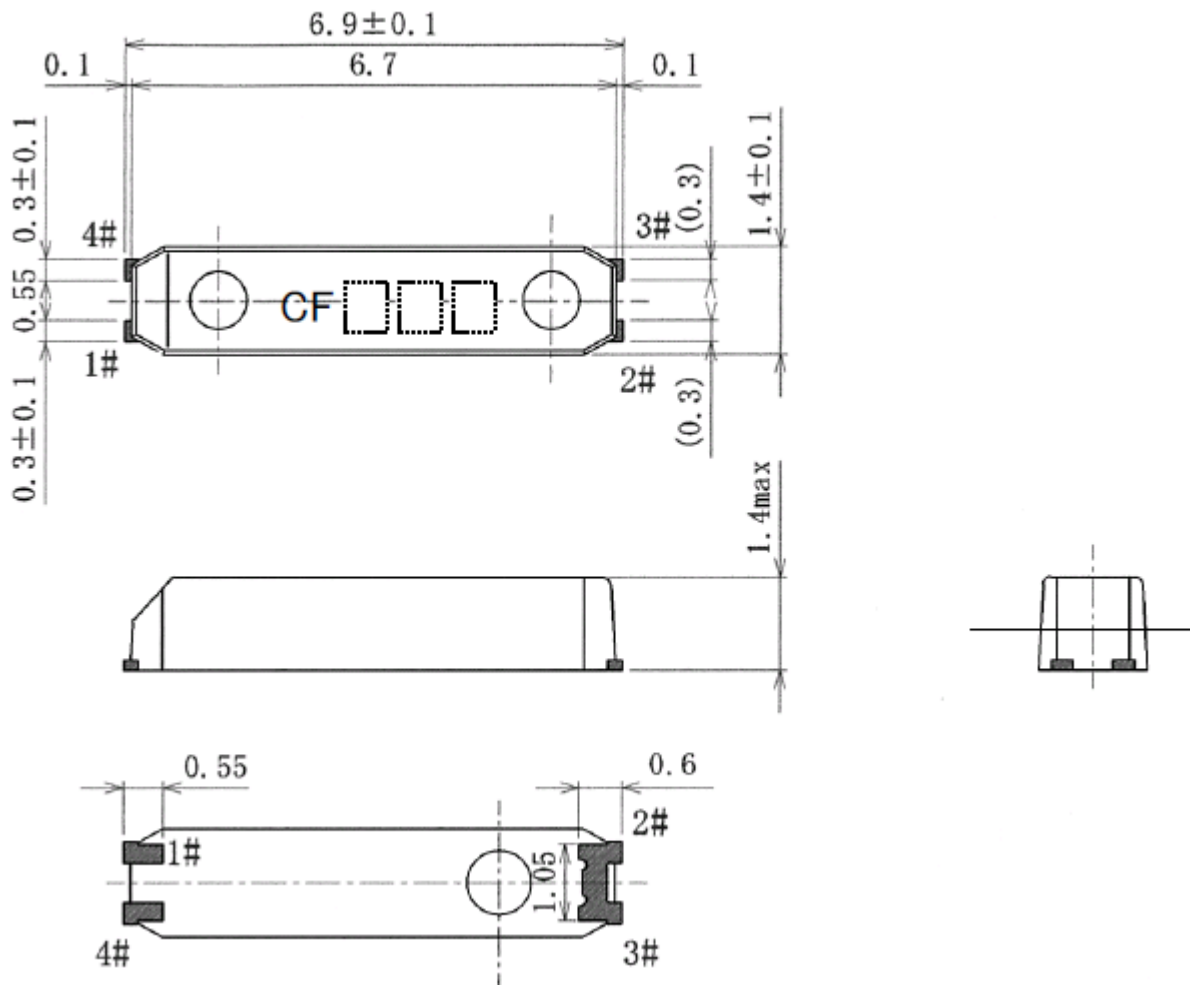
MODEL NO.: TZ0601B

REV. NO.: 3.0

Electrical Specifications:

TZ0601B	Specification
Nominal Frequency	32.768000 KHz
Storage temperature	-55°C to 125°C
Operating Temperature Range	-40°C to +85°C
Temperature characteristics - Turnover temperature	25+/-5 °C
Frequency Make Tolerance (FL)	+/-20 ppm @ 25°C +/- 2°C
Equivalent Series Resistance (ESR)	65K Ω max.
Drive Level	0.1uW (1.0uW max)
Load Capacitance (CL)	12.5 pF
Shunt Capacitance C0	0.8 pF typ
Aging	+/-3.0 ppm max
Temperature tolerance at -20°C to +70°C -40°C to +85°C	-0.042 ppm/°C ² typ
Marking	Laser Marking

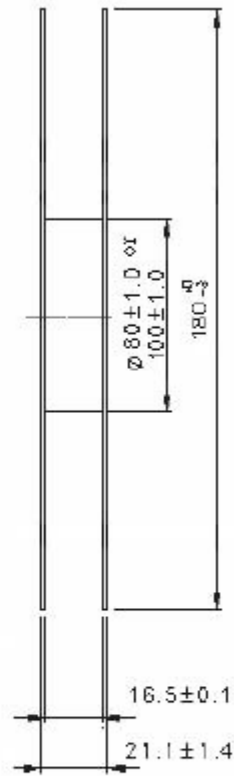
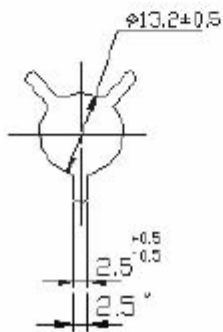
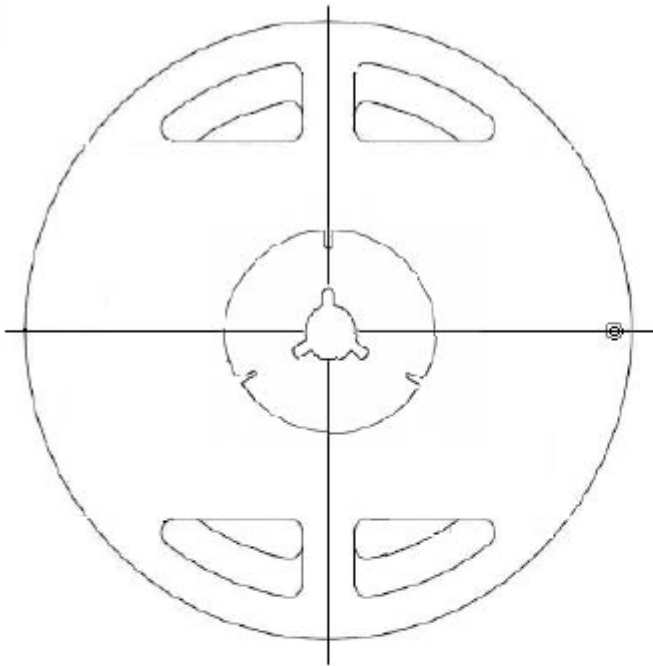
Mechanical Dimensions (mm):



Marking:

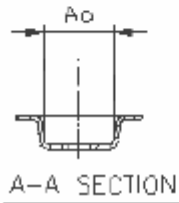
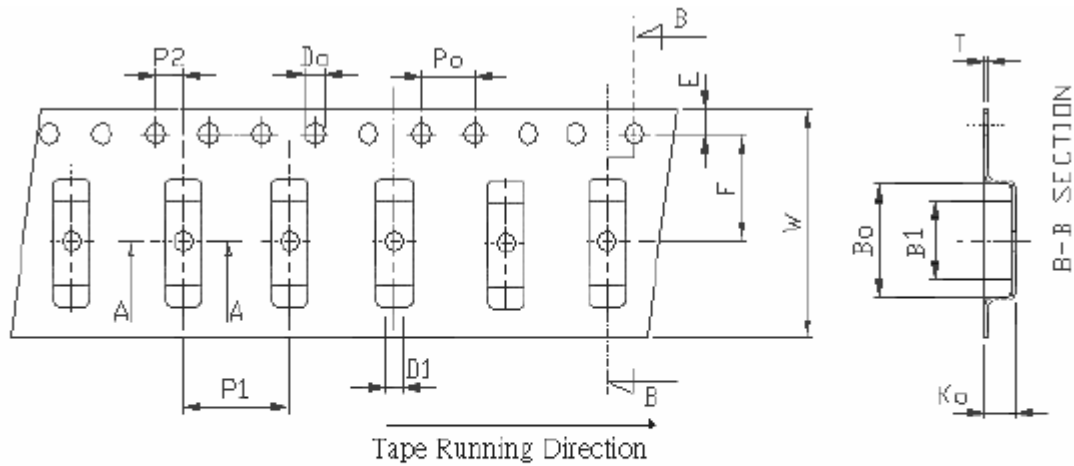
$\frac{C}{*1}$	$\frac{F}{*2}$	$\frac{\square}{*3}$	$\frac{\square\square}{*4}$
*1	*2	*3	*4
Frequency	Specification	Year of Production (Last digit of year)	Week of Production (01~52)

Reel Dimensions (mm):



Unit:mm

Tape Dimensions (mm):



A-A SECTION

$$A_0 = 1.55 \pm 0.10 \text{ mm}$$

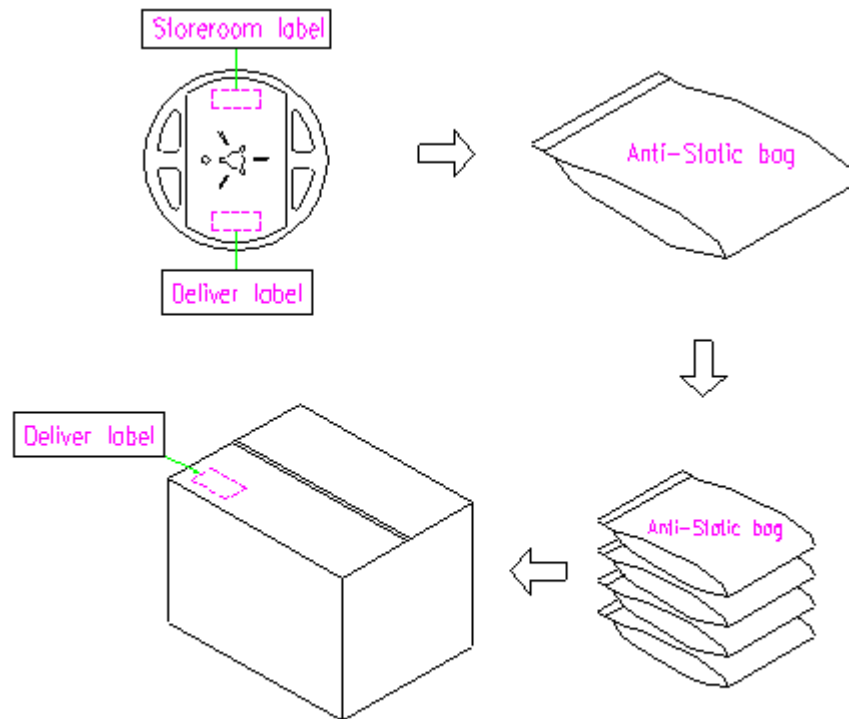
$$B_0 = 7.20 \pm 0.10 \text{ mm}$$

$$K_0 = 1.50 \pm 0.10 \text{ mm}$$

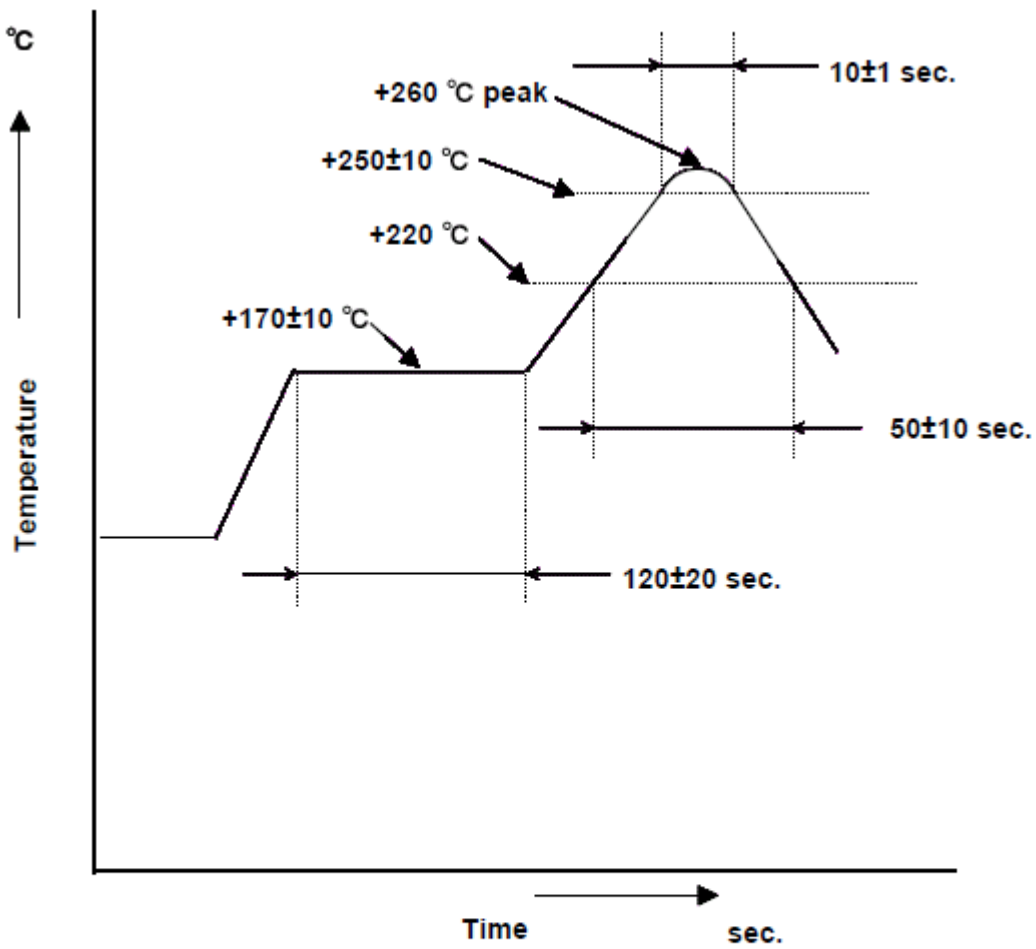
Unit: mm

Symbol	Spec.
B1	4.80 ± 0.20
Po	4.00 ± 0.10
P1	4.00 ± 0.10
P2	2.00 ± 0.10
Do	$1.50^{+0.1}_0$
D1	1.0 (min)
E	1.75 ± 0.10
F	7.50 ± 0.10
10Po	40.0 ± 0.10
W	16.0 ± 0.30
T	0.30 ± 0.05

Packing Quantity/Packing: 3K pcs maximum per reel



Reflow Profile:



Note: The temperature used herein means the temperature on the circuit board.

Reflow : 2 times max.

Reliability Specifications

Test name	Test process / method	Reference standard
Mechanical characteristics		
resistance to Soldering heat (IR reflow)	Temp./ Duration : 260°C /10sec x2 times Total time : 4min.(IR-reflow)	EIAJED-4701 -300(301)M(II)
Vibration	Total peak amplitude : 1.5mm Vibration frequency : 10 to 55 Hz Sweep period : 1.0 minute Vibration directions : 3 mutually perpendicular Duration : 2 hr / direc.	MIL-STD 202F method 201A
Mechanical Shock	directions : 3 impacts per axis Acceleration : 3000g's, +20/-0 % Duration : 0.3 ms (total 18 shocks) Waveform : Half-sine	MIL-STD 202F method 213C
Solderability	Solder Temperature:265±5°C Duration time: 5±0.5 seconds.	MIL-STD 883G method 2003
Environmental characteristics		
Thermal Shock	Heat cycle conditions -55 °C (30min) ↔ 125 °C (30min) * cycle time : 10 times	MIL-STD 883G method 1010.7
Humidity test	Temperature : 70 ± 2 °C Relative humidity : 90~95% Duration : 96 hours	MIL-STD 202F method 103B
Dry heat (Aging test)	Temperature : 125 ± 2 °C Duration : 168 hours	MIL-STD 883G method 1008.2 condition C
PCT test	Pressure: 2.06kg/cm ² (2.03*10 ⁵ pa) Temperature : 121 ± 2 °C Relative humidity : 100% Duration : 24 hours	EIAJED-4701-3 B-123A

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