TAI-SAW TECHNOLOGY CO., LTD.
No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
Taoyuan, 324, Taiwan, R.O.C.
TEL: 886-3-4690038 FAX: 886-3-4697532
E-mail: tstsales@mail.taisaw.com Web: www.taisaw.com

Product Specifications Approval Sheet

Product Description: Crystal Unit 8.0x3.8 32.768KHz

TST Part No.: TZ1702A

Customer Part No.:_____

Customer signature required

Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by: Yifan Chen

Approved by: Kelly Huang

Date: 05/30/2022

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.

Revise:

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	05/24/10’	N/A	Ginger Huang
2	P3&P5	Change Electrical Specifications & Packing	07/25/12’	ECN-201200246	Ginger Huang
3	P3,4	Change Electrical Specifications, Marking	05/02/14’	ECN-201400201	Ginger Huang
4	P4	Change Marking	04/15/15’	ECN-201500166	Yifan Chen
5	P4	Change drawing size and Marking	05/30/22’	ECN- 202200246	Yifan Chen

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RoHS Exemption Approved

32.768KHz Crystal Unit

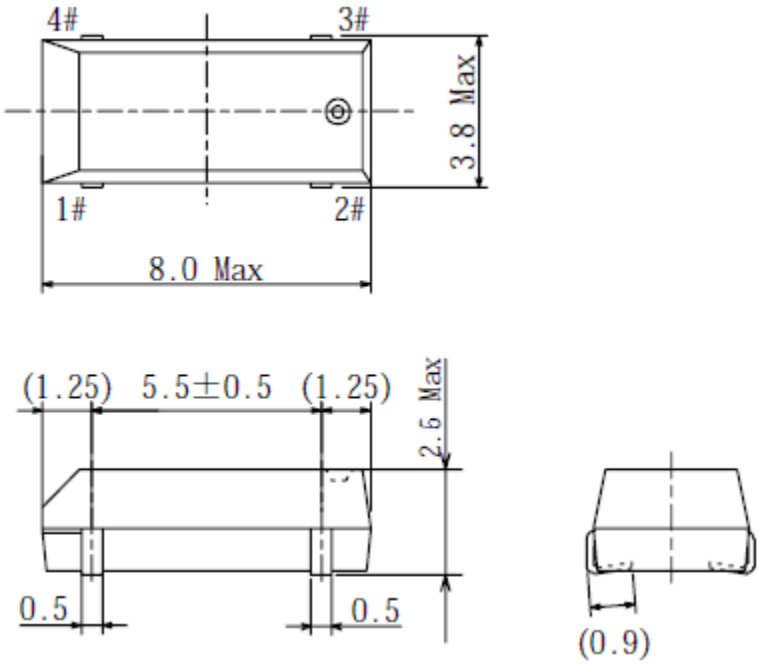
MODEL NO.: TZ1702A

REV. NO.: 5.0

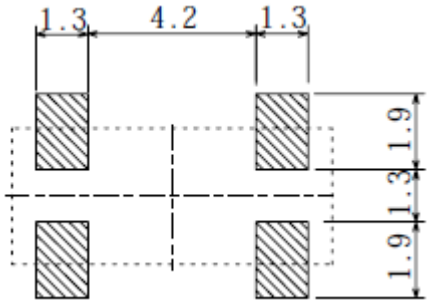
Electrical Specifications:

TZ1702A	**Specification**
Nominal Frequency	32.768000 KHz
Storage temperature	-55 to +125°C
Operating Temperature Range	-40°C to +85°C
Temperature characteristics - Turnover temperature	25+/-5°C
Temperature characteristics - Parabolic curvature constant	-0.034 +/-0.006 ppm/°C^2
Frequency Make Tolerance (FL)	+/-20 ppm @ 25°C +/- 2°C
Equivalent Series Resistance (ESR)	50K Ω max.
Drive Level	1.0 uW max.
Load Capacitance (CL)	6 pF
Aging	+/-3.0 ppm max.
Insulation Resistance	500MΩ Min. / DC100V+/-15V

Mechanical Dimensions (mm):



Lead connection & Land pattern (mm):

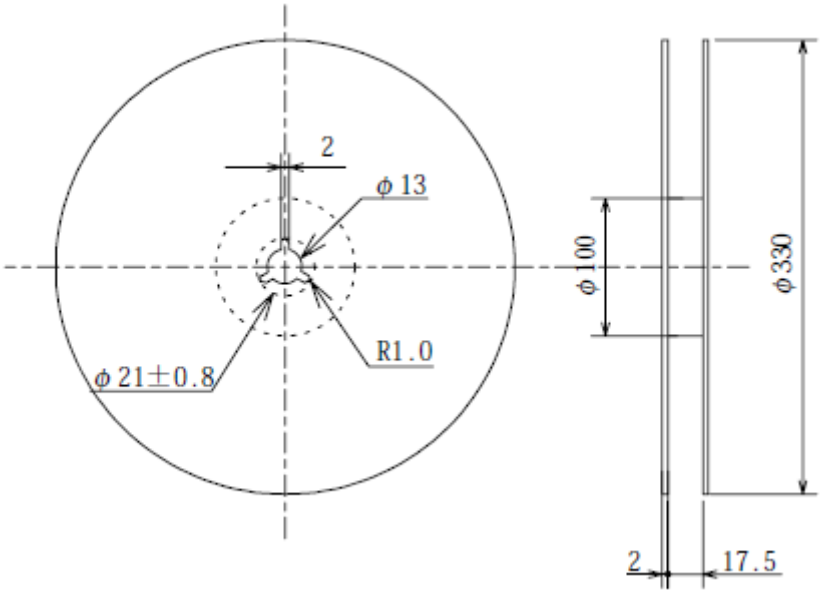


Marking:

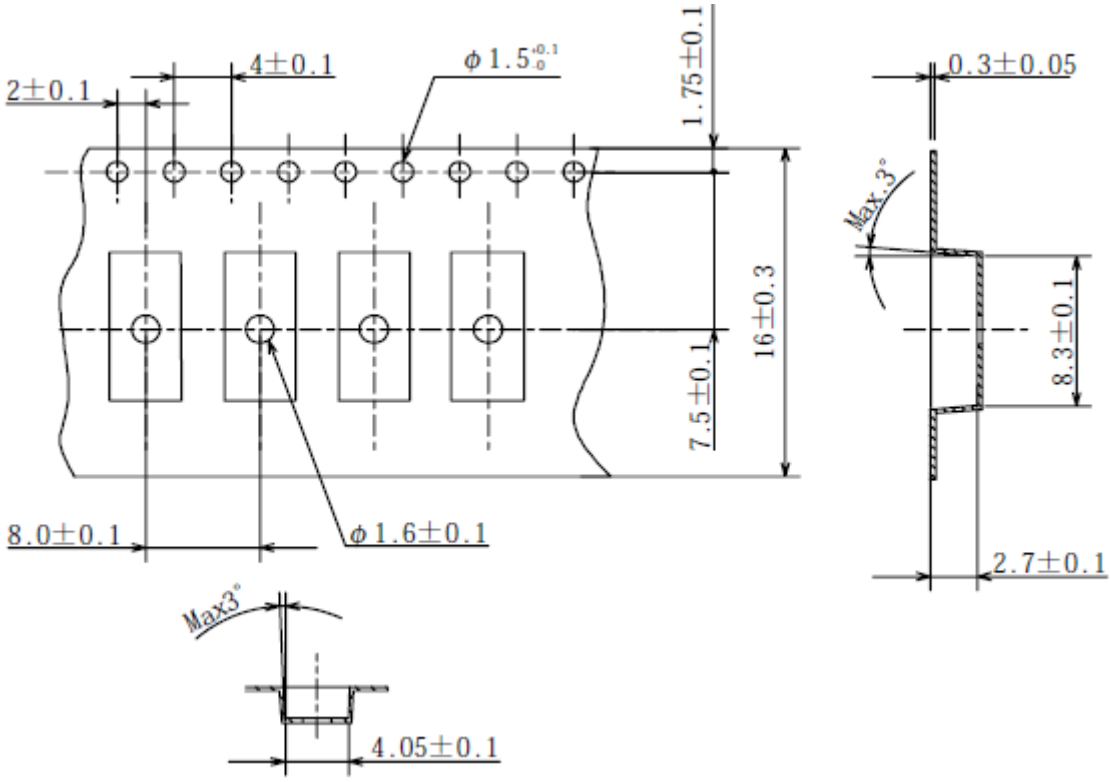
Line1 : 32.768

32.768

Reel Dimensions (mm):

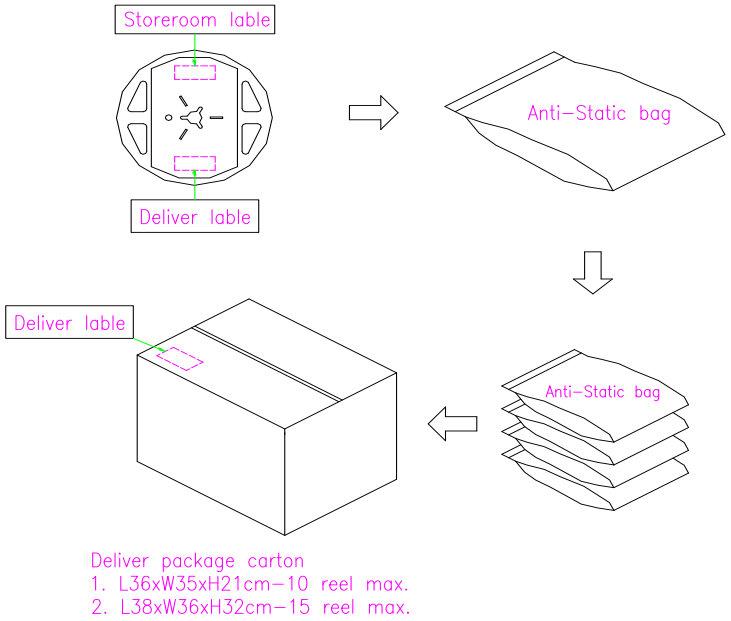


Tape Dimensions (mm):

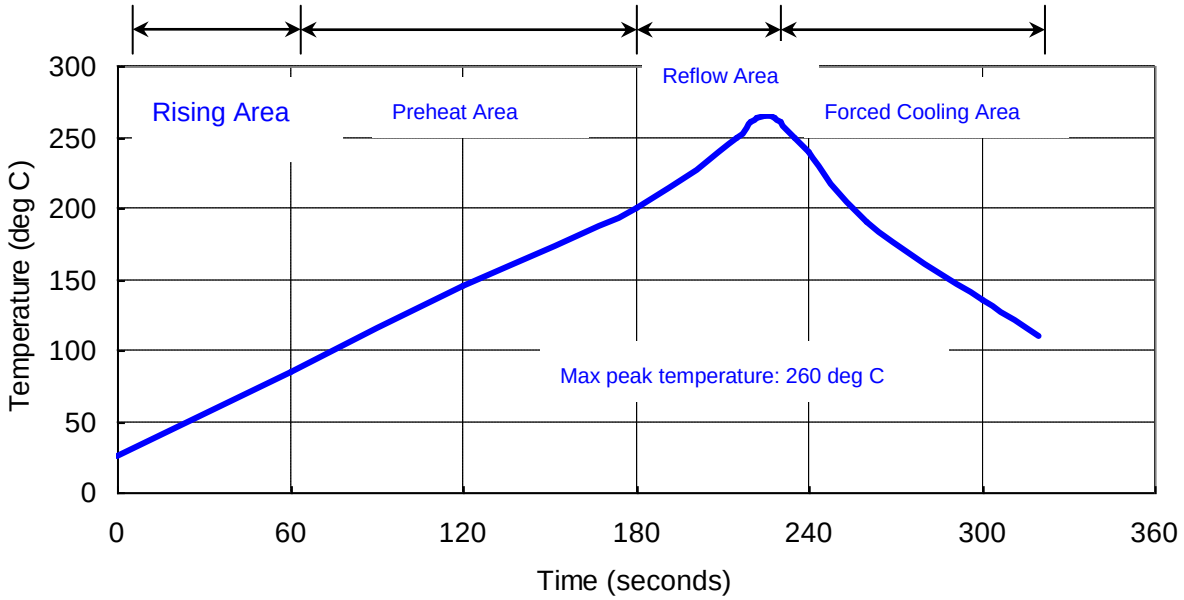


Packing Quantity/Packing:

3K pcs maximum per reel



Reflow Profile:



Reliability Specifications

Test name	Test process / method	Reference standard
Mechanical characteristics		
resistance to Soldering heat (IR reflow)	Temp./ Duration : 260°C /10sec ×2 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 ℃ (30min) ⟷ 125 ℃ (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