

TAI-SAW TECHNOLOGY CO., LTD. No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,

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: Tuning Fork Crystal Unit 3.2x1.5 32.768KHz

TST Part No.: TZ1006AC

Customer Part No.:\_\_\_\_\_

Customer signature required	I	
Company:		
Division:		
Approved by :		
Date:		
Checked by:	Yifan Chen	Lifan
Approved by:	Kelly Huang	Kully Huang
	-	' ] V
Date:	01/19/2018	

- 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.

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TAI-SAW TECHNOLOGY CO., LTD. Tuning Fork 3.2x1.5 32.768KHz Crystal Unit

MODEL NO .: TZ1006AC

REV. NO.: 1.0

### **Revise:**

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	01/19/18'	N/A	Yifan Chen



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### Tuning Fork 3.2x1.5 32.768KHz Crystal Unit

MODEL NO.: TZ1006AC

### Features:

- Ceramic Seam Weld Package
- Excellent Reliability Performance
- Ultra Miniature Package
- Available to Surface Mount Technology and IR Reflow Process

## **Description and Applications:**

Surface mount 3.2mmx1.5mm crystal unit for use in communications devices,.

## **Electrical Specifications:**

TZ1006AC	Specification
Nominal Frequency	32.768000 KHz
Storage Temperature Range	-55°C to +125°C
Operating Temperature Range	-40°C to +85°C
Turnover Temperature	25 +/- 5 °C
Parabolic Curvature Constant	-0.034 +/-0.006 ppm / °C <sup>2</sup> max.
Frequency Make Tolerance (FL)	+/-20 ppm @ 25°C +/- 2°C
Equivalent Series Resistor (ESR)	70 kΩ max.
Drive Level	1.0 uW max.
Load Capacitance (CL)	12.5 pF
Shunt Capacitance (Co)	0.95 pF typ.
Aging	+/-3.0 ppm/year @25°C
Insulation Resistance	500M $\Omega$ min at DC 100V
Marking	Laser marking

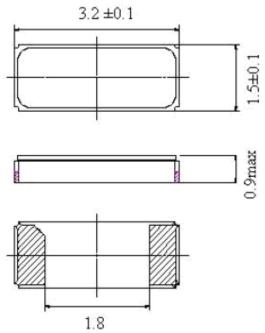
REV. NO.: 1.0

RoHS Compliant Lead free Lead-free soldering

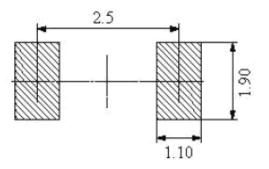
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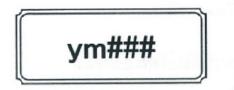
## Mechanical Dimensions (mm):



## Recommended soldering pattern:



Marking:



- y : The last digit of production year
- m : Production month (See Table.1)
- # : Production Lot No.

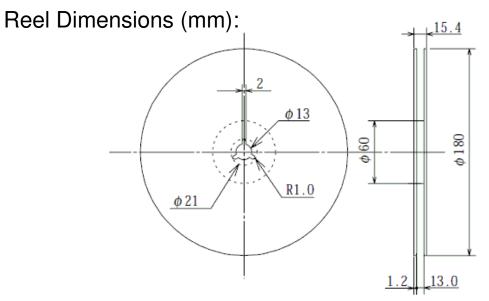
Table.1

Month	Jan	Feb	 Sep	Oct	Nov	Dec
Code	1	2	 9	Х	Y	Z

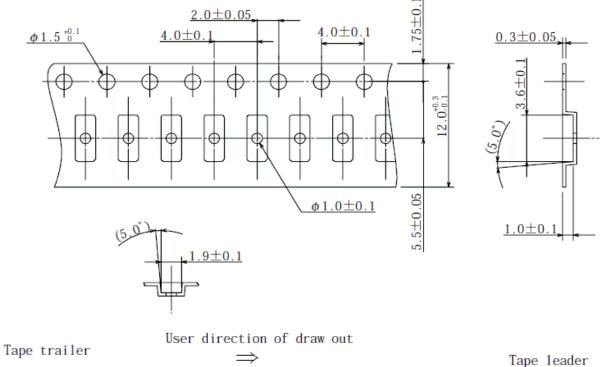
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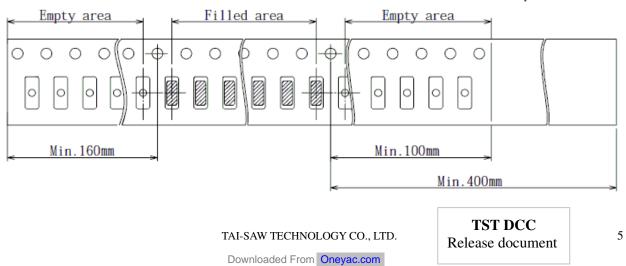
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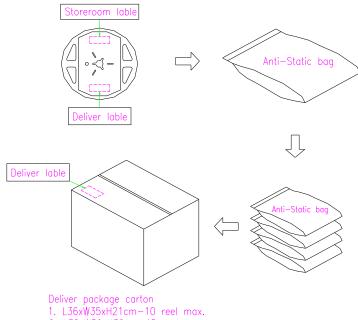


Tape Dimensions (mm):



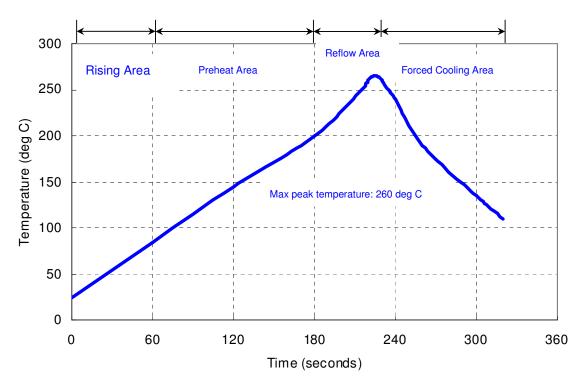


### Packing Quantity/Packing: 3K pcs maximum per reel



#### 2. L38xW36xH32cm-15 reel max.





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# **Reliability Specifications**

Test name	Test process / method	Reference standard			
Mechanical characteristics					
resistance to Soldering heat (IR reflow)	Temp/ Duration : 265°C /10sec ×2 times Total time : 4min.(IR-reflow)	EIAJED-4701 -300(301)M(II)			
Vibration	Total peak amplitude : 1.5mmVibration frequency: 10 to 2000 HzSweep period: 20 minuteVibration directions: 3 mutually perpendicularDuration: 2 hr / direc.	MIL-STD 202G method 204			
Mechanical Shock	directions : 3 impacts per axis Acceleration : 3000g's, +20/-0 % Duration : 0.3 ms (total 18 shocks) Waveform : Half-sine	MIL-STD 202G method 213			
Solderability	Solder Temperature:265±5℃ Duration time: 5±0.5 seconds.	J-STD-002			
Environmental	characteristics	•			
Thermal Shock	Heat cycle conditions -40 °C (30min) ←→ 85 °C (30min) * cycle time : 10 times	MIL-STD 883G method 1010.8			
Humidity test	Temperature: $85 \pm 2 \ ^{\circ}$ Relative humidity: $85\%$ Duration:96 hours	MIL-STD 202G method 103			
Dry heat (Aging test)	Temperature : 125 ± 2 ℃ Duration : 168 hours	MIL-STD 202G method 108A			
Cold resistance (Low Temp Storage)	Temperature :-40 ± 2 ℃ Duration : 96 hours	IEC 60068-2-1			

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