



# 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](mailto:tstsales@mail.taisaw.com) Web: [www.taisaw.com](http://www.taisaw.com)

## Product Specifications Approval Sheet

Product Description: SMD 3.2x2.5 32.768KHz TCXO

TST Part No.: TX0777CH6330

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

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

Checked by: \_\_\_\_\_ C.C. Hsu *C.C. Hsu*

Approved by: \_\_\_\_\_ Kelly Huang *Kelly Huang*

Date: \_\_\_\_\_ 4/11/2023

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 3.2x2.5 32.768KHz TCXO

MODEL NO.: TX0777CH6330

REV. NO.:1

### Revise:

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	4/11/23'	N/A	C.C. Hsu



# 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](mailto:tstsales@mail.taisaw.com) Web: [www.taisaw.com](http://www.taisaw.com)

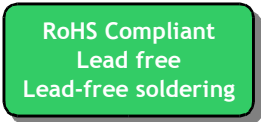
## SMD 3.2x2.5 32.768KHz TCXO

MODEL NO.: TX0777CH6330

REV. NO.: 1

### Features:

- Miniature SMD Package
- MSL LEVEL; 2



### Description and Applications:

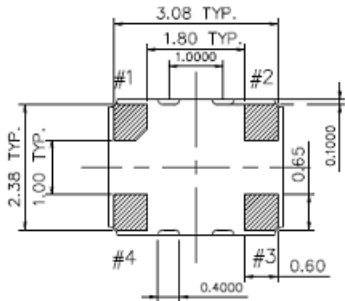
Surface mount 3.2mmx2.5mm TCXO

### Electrical Specifications:

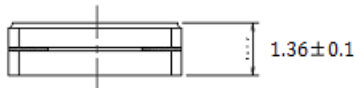
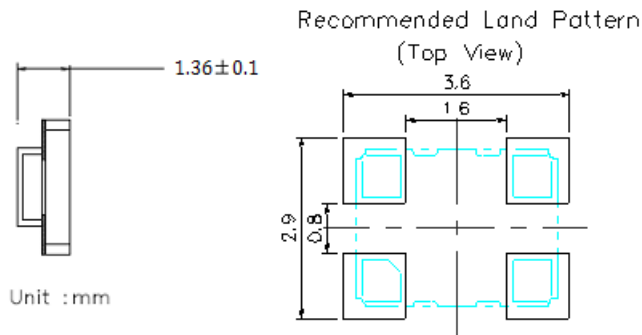
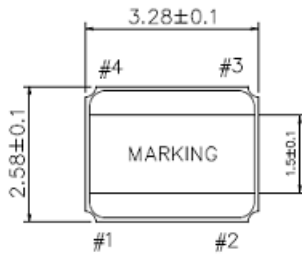
TX0777CH6330	Specifications
Nominal Frequency, Fo	32.768 KHz
Storage Temperature Range	-55°C to +85°C
Operating Temperature Range	-40°C to +85°C
Power Supply Voltage, Vdd	3.3V +/- 5%
Output Waveform	CMOS Square Wave
Output Load	15pF
“0” Level “1” Level	0.4V max I <sub>OL</sub> =0.1mA V <sub>DD</sub> -0.4V min I <sub>OH</sub> =-0.1mA
Power Supply Current, I <sub>CC</sub>	1uA typical 2uA max without load
Initial Frequency Tolerance	+/- 2.5 ppm max @ 25°C +/- 3°C
Duty Cycle	40% ~ 60% Typical
Rise Time ( 20% -> 80% of final RF level in V <sub>p-p</sub> ) Fall Time ( 80% -> 20% of final RF level in V <sub>p-p</sub> )	100 nsec max. 100 nsec max.
Frequency Stability a. Vs. Temperature (-40~85°C) b. Vs. Supply Voltage Delta Freq/V	+/- 5.0 ppm reference to 2 5°C +/- 1 ppm/V
Reflow	+/-3 ppm max
Start –Up Time	1 s max @ 25°C, 3 s max over -40°C to +85°C
Aging	+/-3 ppm per years

Tri-State Enable Voltage (High) Disable Voltage (Low) output Tri-state Open	80% Vdd min 20% Vdd max Forbidden
--	---

## Mechanical Dimensions (mm):

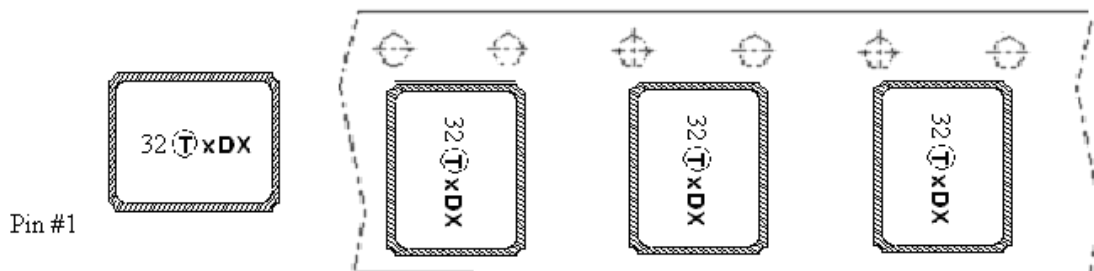


Pin 1	Output Enable
Pin 2	Ground
Pin 3	Frequency out
Pin 4	Supply Voltage



## Marking:

Line 1: 32 + TST Logo + Product Code + Date Code + Traceability code (1 or 2 letters)



## Product Code Table

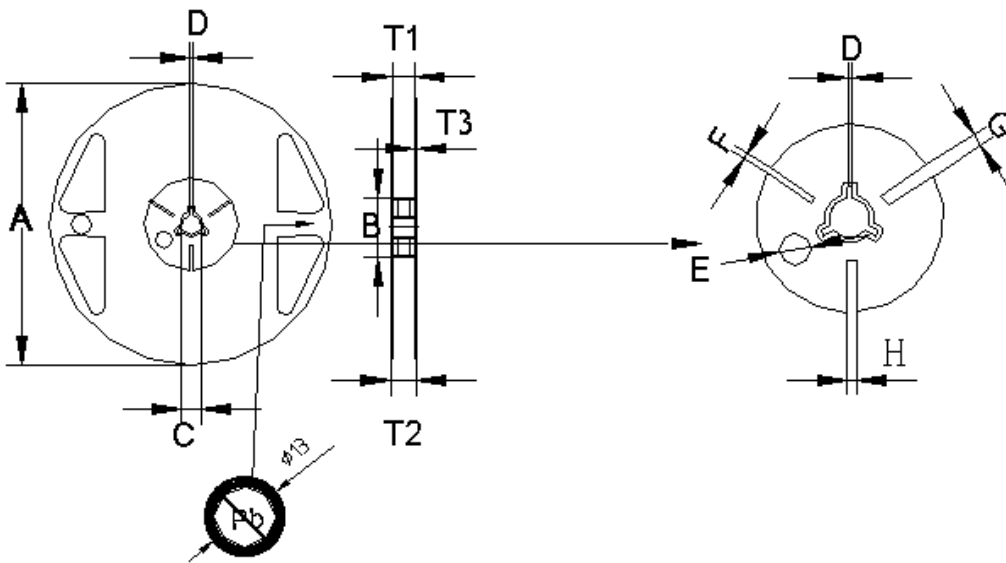
Year	2021 2025 2029	2022 2026 2030	2023 2027 2031	2024 2028 2032
Product Code	X	x	<u>X</u>	<u>X</u>

## Date Code Table

WK01	WK02	WK03	WK04	WK05	WK06	WK07	WK08	WK09	WK10	WK11	WK12	WK13
A	B	C	D	E	F	G	H	I	J	K	L	M
WK14	WK15	WK16	WK17	WK18	WK19	WK20	WK21	WK22	WK23	WK24	WK25	WK26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
WK27	WK28	WK29	WK30	WK31	WK32	WK33	WK34	WK35	WK36	WK37	WK38	WK39
a	b	c	d	e	f	g	h	i	j	k	l	m
WK40	WK41	WK42	WK43	WK44	WK45	WK46	WK47	WK48	WK49	WK50	WK51	WK52
n	o	p	q	r	s	t	u	v	w	x	y	z

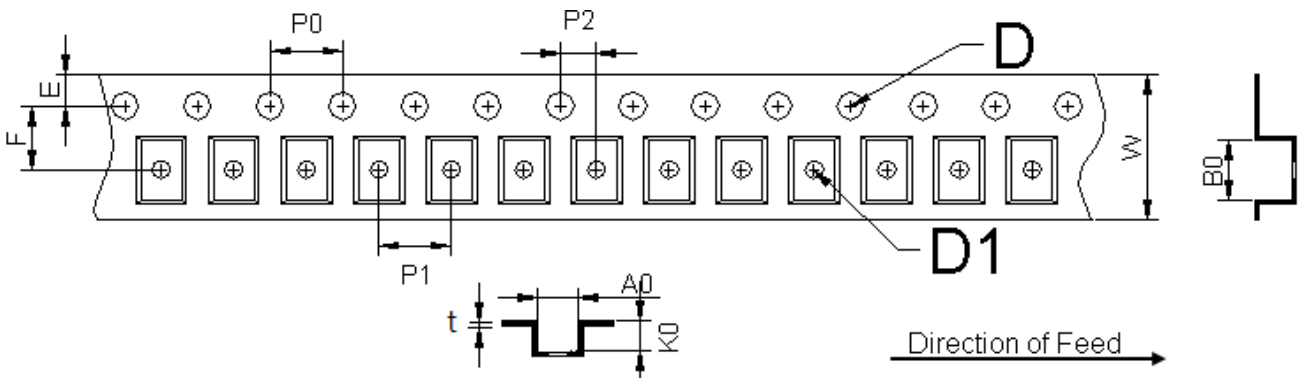
## Packing (mm):

### 1. Reel Dimension



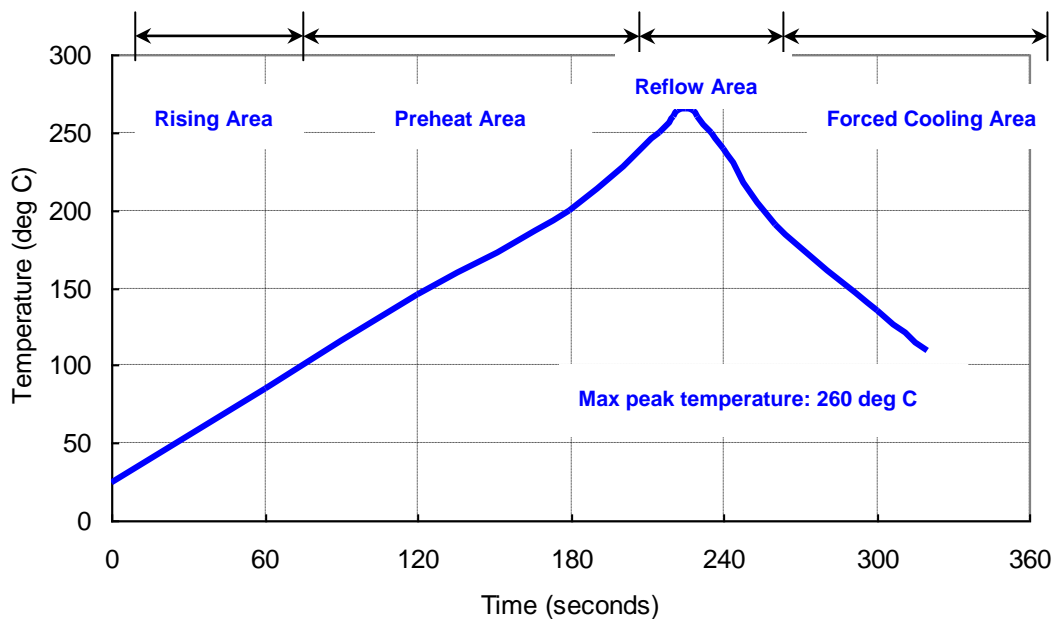
	A	B	C	D	E	F	H	G	T2	T1	T3
Dimensions	180	60	13.0	2.0	9.1	2.9	3.9	4.9	11.4	9.0	1.2
Tolerance	$\pm 1.0$	$\pm 1.0$	$\pm 0.2$	$\pm 0.5$	$\pm 0.5$	$\pm 0.5$	$\pm 0.5$	$\pm 0.5$	$\pm 1.0$	$\pm 0.3$	$\pm 0.1$

### 2. Tape Dimension



Unit: mm	A0	B0	W	F	E	P0	P1	P2	D1	D	K0	t
Dimension	2.80	3.71	8.00	3.5	1.75	4.00	4.00	2	1.50	1.0	1.75	0.25
Tolerance	$\pm 0.1$	$\pm 0.1$	$+0.3/-0.1$	$\pm 0.05$	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.05$	$+0.1/-0.00$	$+0.25/-0.00$	$\pm 0.1$	$\pm 0.02$

## Reflow Profile:



## Notes of the Usage:

1. Touch the solder iron at  $260 \pm 5$  deg C onto the leads for  $10 \pm 2$  sec max or touch the solder at  $350 \pm 5$  deg C onto the leads for  $3 \pm 0.5$  sec.
2. In the customer's reflow process, if it will remain some mechanical stress at the soldering terminals, also make some cracks on the soldering termination. Some cracks will cause open or short circuit and cause of thermal increasing or smoking. Don't make any excess mechanical stress to soldering points.
3. In case of giving a heavy shock to the products, it may make an open or short circuit and cause of thermal increasing and smoking. To avoid heavy shock impact applying to products is strictly required.

## Notes of the Storage:

1. To keep products under the condition at the room temperature ( $-5 \sim 35$  deg C) with normal humidity (45~75%). Absorption of moisture and dewdrop may make inferiority of characteristics and a short circuit.
2. Oxidization of terminals shall make the solderability more inferior. Dusts and corrosive gas will make a cause of the open or short circuit. Keep it in the clean place where is not in dusty and no corrosive gas.
3. Use the anti-static material to the storage package.
4. Don't put any excess weight to the TCXO in the storage process.