



# TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,  
Taoyuan, 324, Taiwan, R.O.C.

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## Product Specifications Approval Sheet

Product Description: VCXO SMD 14x9 122.88MHz

TST Part No.: TV0177AACM01

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: \_\_\_\_\_ 07/06/2023

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.



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SMD 14x9 122.88MHz VCXO

MODEL NO.: TV0177AACM01

REV. NO.: 1.0

## Revise:

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	07/06/23'	N/A	C.C.Hsu



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## 14x9 VCXO 122.88MHz

MODEL NO.: TV0177AACM01

REV. NO.:1.0

### Features:

1. 3.3V Operation
2. Enable / Disable Function
3. Main application: WLAN, SONET/SDH/DWDM, Gigabite Ethernet, Storage Area Network, Digital Video
4. Surface mount 14mmx9mm crystal oscillator
5. Moisture Sensitive Level (MSL): Level 1

RoHS Compliant  
Lead free  
Lead-free soldering

### Electrical Specifications:

#### ➤ FREQUENCY

	Parameter	Min.	Typ.	Max.	Units	Test Condition
1-1	Nominal Frequency	122.880000			MHz	
1-2	Frequency stability (Overall)	-25.0		+25.0	ppm	Frequency stability includes frequency tolerance@25°C and frequency stability vs. operating temperature range and voltage variance and load Variance and 10 years aging.
1-3	Operating Temperature range	-40		+85	°C	The operating temperature range over which the frequency stability is measured.
1-4	Storage Temperature range	-45		+90	°C	

#### ➤ POWER SUPPLY

	Parameter	Min.	Typ.	Max.	Units	Test Condition
2-1	Supply voltage	3.135	3.3	3.465	V	
2-2	Current			30	mA	At maximum supply voltage

➤ **OUTPUT**

	Parameter	Min.	Typ.	Max.	Units	Test Condition
3-1	Output waveform	CMOS				
3-2	Duty Cycle	45	50	55	%	
3-3	Transition Time Rise/Fall Time			3	ns	20%~80%
3-4	Output Level	1kOhm//15pF			pF	
3-5	Center Voltage		1.65		V	
3-6	Control Voltage Range	0		3.3	V	
3-7	Pulling Range	±25			ppm	
3-8	Linearity			10	%	
3-9	Modulation Bandwidth	1			KHz	(-3dB cut-off frequency)
3-10	VC Input Impedance	100			KΩ	

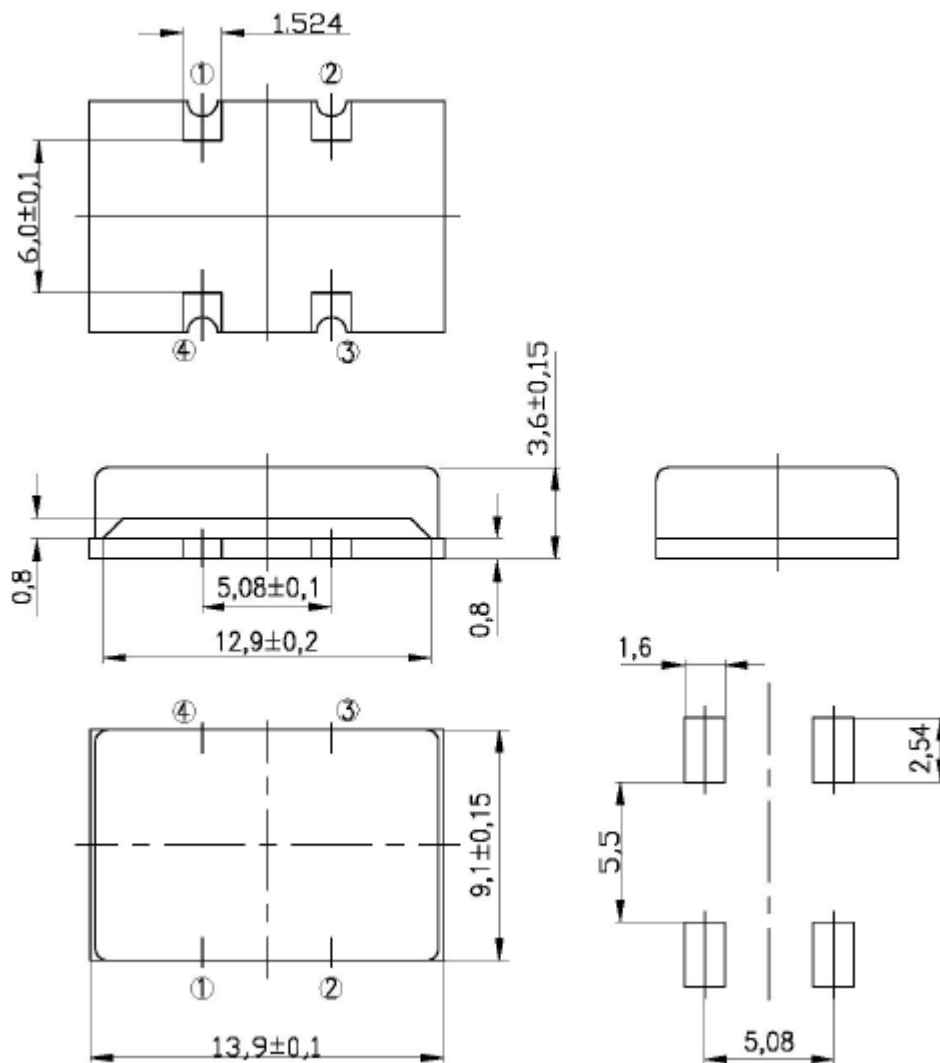
➤ **PHASE NOISE**

	Parameter	Min.	Typ.	Max.	Units	Test Condition
4-1	10 Hz offset			-75	dBc/Hz	
4-2	100 Hz offset			-110	dBc/Hz	
4-3	1K Hz offset			-137	dBc/Hz	
4-4	10K Hz offset			158	dBc/Hz	
4-5	100K Hz offset			-167	dBc/Hz	
4-6	1M Hz offset			-170	dBc/Hz	

➤ **CUSTOMER SPECIAL REQUIREMENT**

5-1	Tuning Sensitivity @ Vc = 1.65V: +24ppm/V typical
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## Mechanical Dimensions (mm):



## PIN FUNCTIONS

Pin	Function
#1	Vcon
#2	GND
#3	Output
#4	VDD

# Marking:

Line 1 : Frequency (122.880)

Line 2 :  $\text{\textcircled{T}}$ XDXX (TST Logo + Product Code + Date Code + Internal Traceability Code (XX) :

Can be 1 or 2 letters)



## Product Code Table

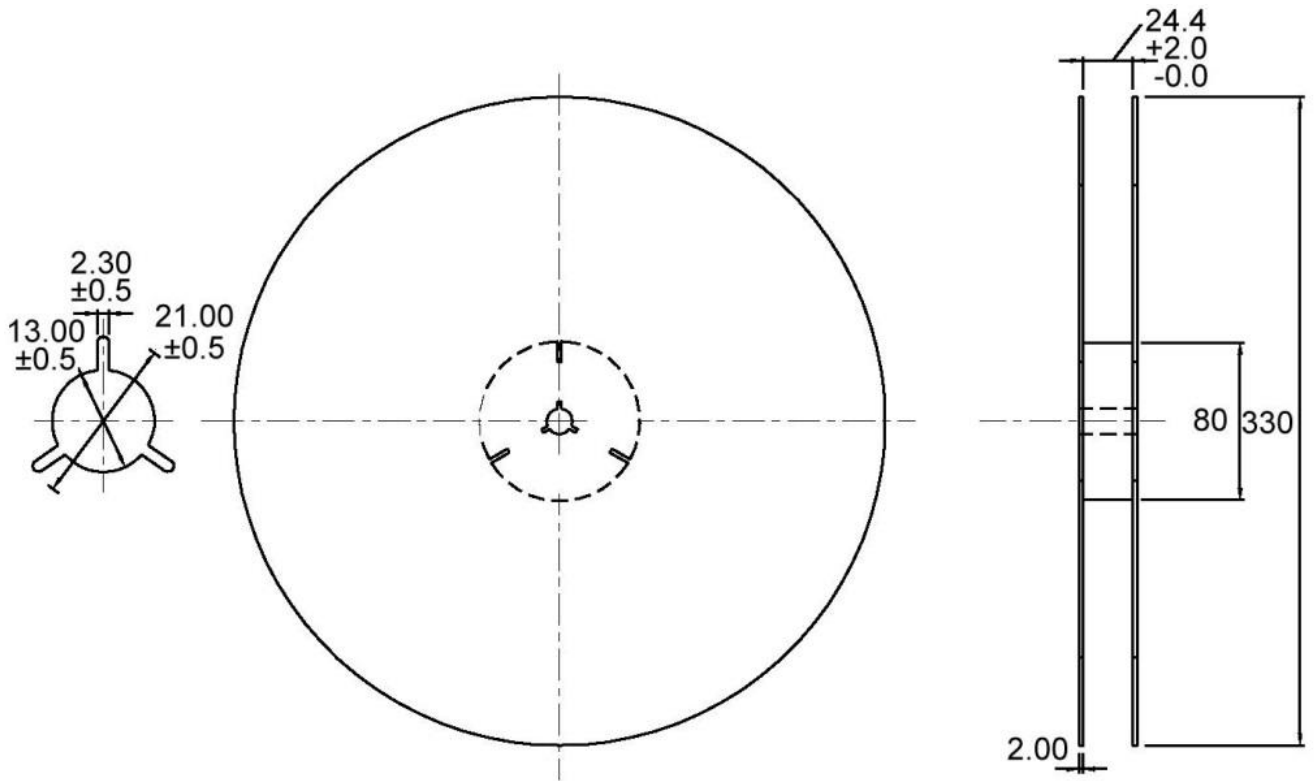
Year	2021	2022	2023	2024
	2025	2026	2027	2028
	2029	2030	2031	2032
Product code	X	x	<u>X</u>	<u>x</u>

## Date Code Table

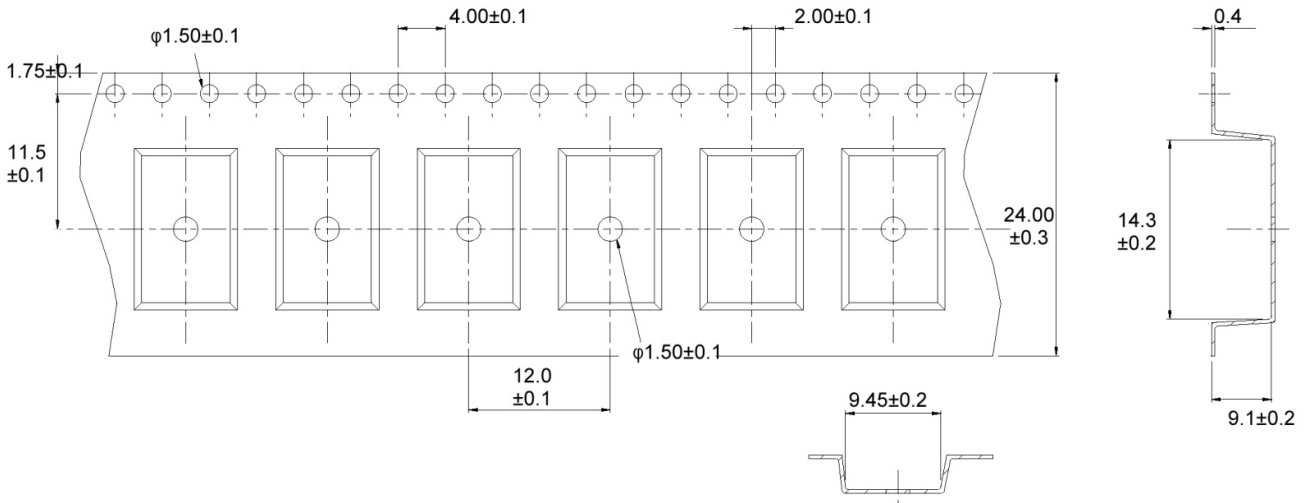
WK01	WK02	WK03	WK04	WK05	WK06	WK07	WK08	WK09	WK10	WK11	WK12	WK13
A	B	C	D	E	F	G	H	I	J	K	L	M
WK14	WK15	WK16	WK17	WK18	WK19	WK20	WK21	WK22	WK23	WK24	WK25	WK26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
WK27	WK28	WK29	WK30	WK31	WK32	WK33	WK34	WK35	WK36	WK37	WK38	WK39
a	b	c	d	e	f	g	h	i	j	k	l	m
WK40	WK41	WK42	WK43	WK44	WK45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

# Tape & Reel:

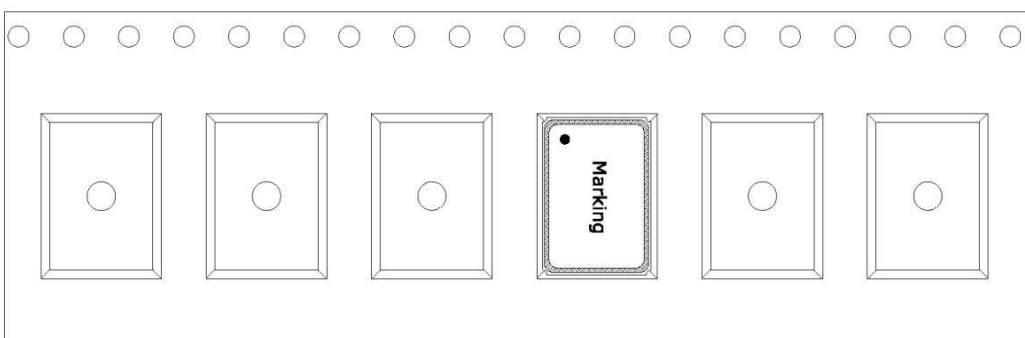
- Reel dimension (unit: mm)



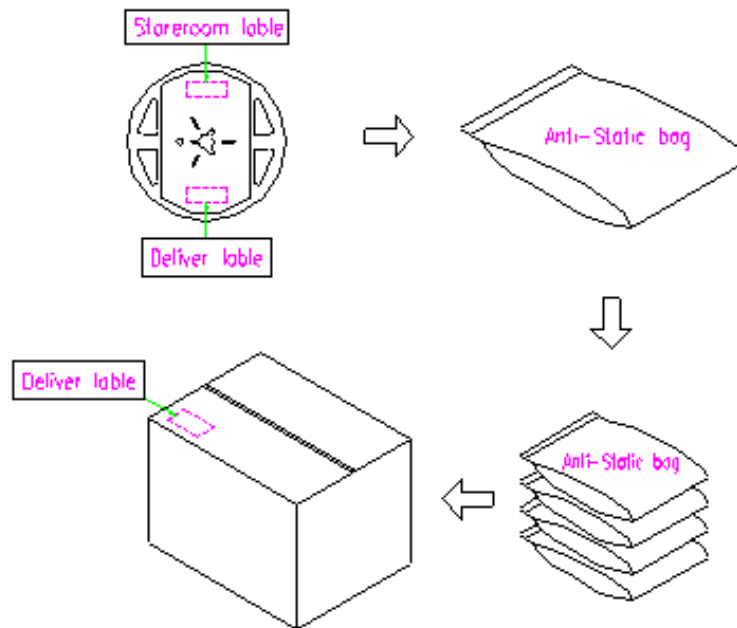
- Tape dimension (unit: mm)



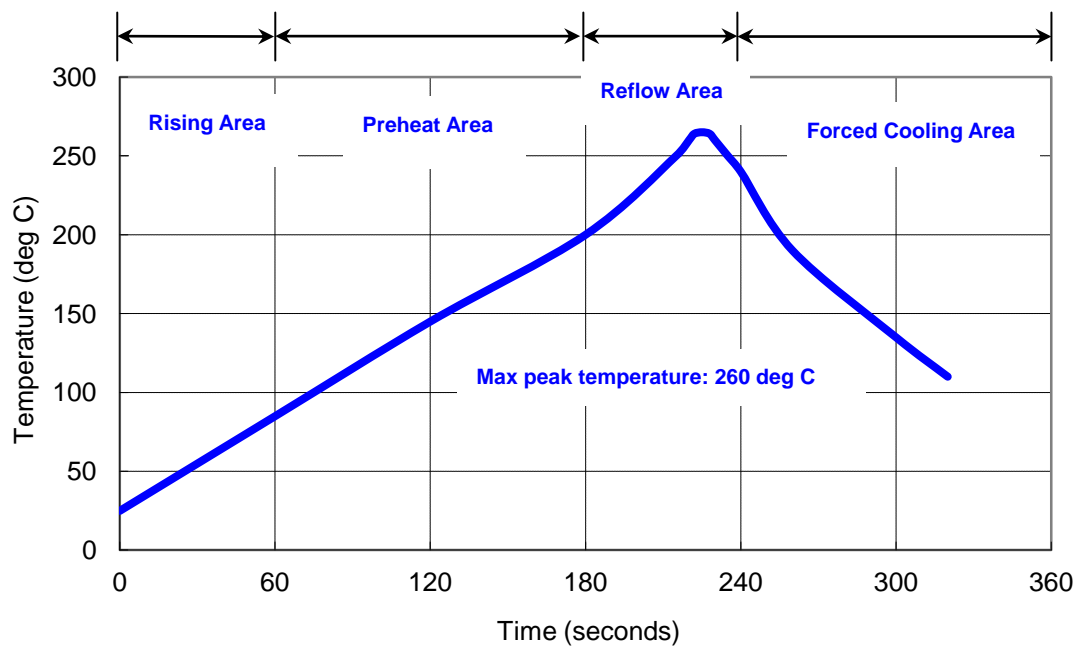
- Packing direction



## Packing Quantity/Packing:



## Reflow Profile:





## Reliability Specifications

Test name	Test process / method	Reference standard
<b>Mechanical characteristics</b>		
resistance to Soldering heat (IR reflow)	Temp./ Duration : 265°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 2000 Hz Sweep period : 20 minute Vibration directions : 3 mutually perpendicular Duration : 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°C Duration time: 5±0.5 seconds.	J-STD-002
<b>Environmental characteristics</b>		
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 ± 2 °C Relative humidity : 85% Duration : 96 hours	MIL-STD 202G method 103
Dry heat ( Aging test )	Temperature : 125 ± 2 °C Duration : 168 hours	MIL-STD 202G method 108A
Cold resistance (Low Temp Storage)	Temperature : -40 ± 2 °C Duration : 96 hours	IEC 60068-2-1