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 Oscillator SMD 7.0x5.0 50MHz

TST Part No.: TW0527C

Customer Part No.:_____

Customer signature required

Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by:_____ Tom Liu Tom

Approved by:_____ Yifan Chen Yifan

Date:_____ 03/07/2024

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
p	N/A	Initial release	03/07/24’	N/A	Tom Liu

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SMD 7.0x5.0 50MHz Crystal Oscillator

MODEL NO.: TW0527C REV. NO: 1.0

Features:

RoHS Compliant
Lead free
Lead-free soldering

- Surface Mount Seam Weld Package
- Excellent Reliability Performance
- Good Frequency Perturbation and Stability over temperature
- Moisture Sensitivity Level (MSL) : Level-1

Application:

- 3.3 V Supply Voltage LVPECL Output
- Option-able stand-by function for output .

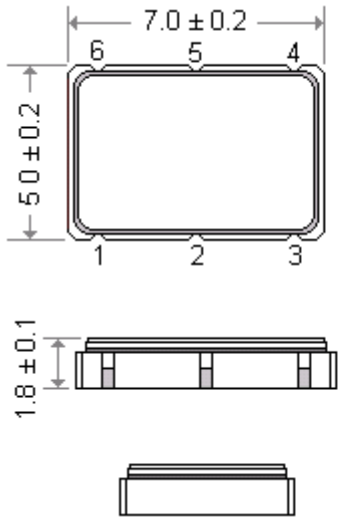
Electrical Characteristics:

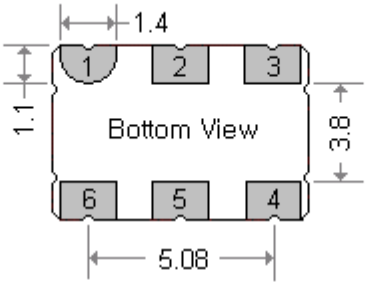
TW0527C	**Specifications**
Nominal Frequency, Fo	50.000000 MHz
Storage Temperature Range	-55°C to +125°C
Operating Temperature Range	-40°C to +105°C
Power Supply Voltage, Vcc	3.3 V +/- 5%
Load	50 ohm (LVPECL Output)
“0” Level “1” Level	1.7 V max 2.27 V min
Output Voltage Swing	595 mV min , 750 mV typ. , 930 mV max
Frequency Tolerance	+/-50 ppm max
Power Supply Current, Icc	30 mA typ. and 50 mA max
Rise Time (20% -> 80% of final RF level in Vp-p) Fall Time (80% -> 20% of final RF level in Vp-p)	0.3 nsec typ. , 0.5 nsec max. 0.3 nsec typ. , 0.5 nsec max.
Duty Cycle	45% ~ 55%
Star-up Time	5.0 msec typ. , 10 msec max
RMS Phase Jitter (12K~20MHz)	0.2 ps max
Aging	+/-3.0 ppm/ 1 year
SSB Phase Noise (@10Hz Carrier Offset) SSB Phase Noise (@100Hz Carrier Offset) SSB Phase Noise (@1KHz Carrier Offset) SSB Phase Noise (@10KHz Carrier Offset) SSB Phase Noise (@1MHz Carrier Offset) SSB Phase Noise (@10MHz Carrier Offset)	-50 dBc/Hz typ -80 dBc/Hz typ -115 dBc/Hz typ -135 dBc/Hz typ -147 dBc/Hz typ -152 dBc/Hz typ

Enable/Disable Function	PIN 1: High or Open, PIN 3:Output Enable PIN 1: Low, PIN 3:Output Disable

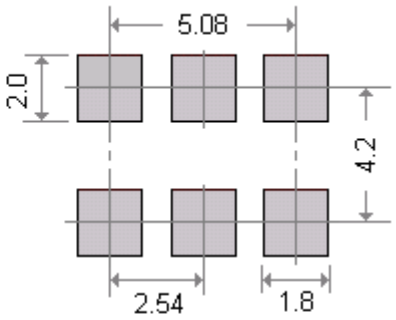
#Note 1: Frequency accuracy includes 25C tolerance, operating temperature range -40 to 105deg C, aging and voltage or load change

Mechanical Dimensions: (Unit: mm)





Pad Connections :
Pad 1 : Tri - state
Pad 2 : No connection
Pad 3 : Ground
Pad 4 : PECL output
Pad 5 : Complimentary output
Pad 6 : Supply voltage

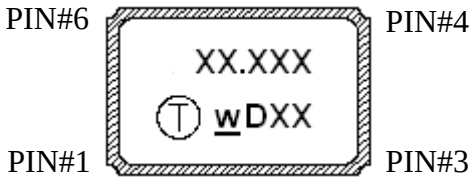


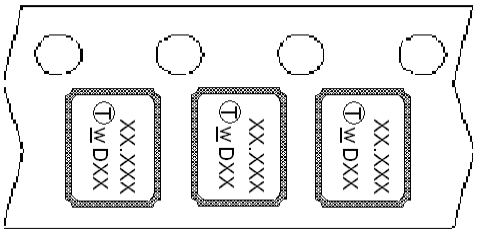
Suggested Land Pattern

Marking :

Line 1 : Frequency (50.000)

Line 2 : TST Logo + Product Code + Date Code + Internal Traceability Code (XX) : Can be 1 or 2 letters)





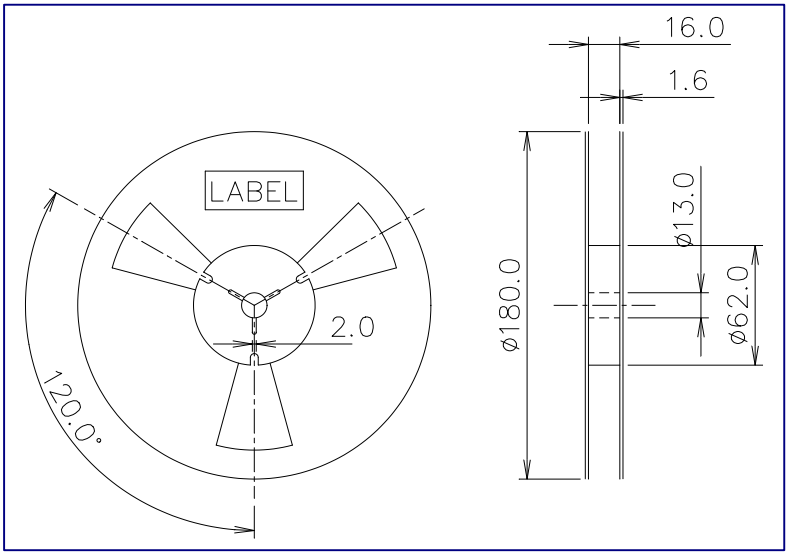
Product Code Table

Year	2021	2022	2023	2024
	2025	2026	2027	2028
	2029	2030	2031	2032
Product code	W	w	W	w

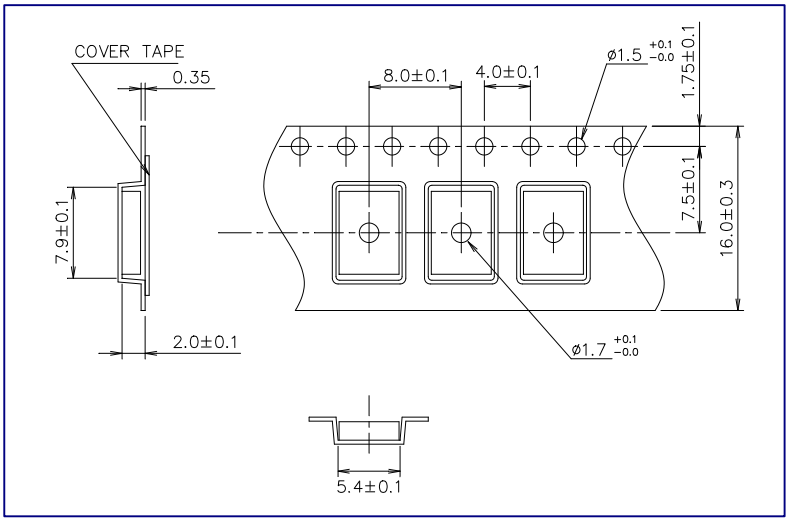
Date Code Table

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

Reel Dimensions (mm):



Tape Dimensions (mm):

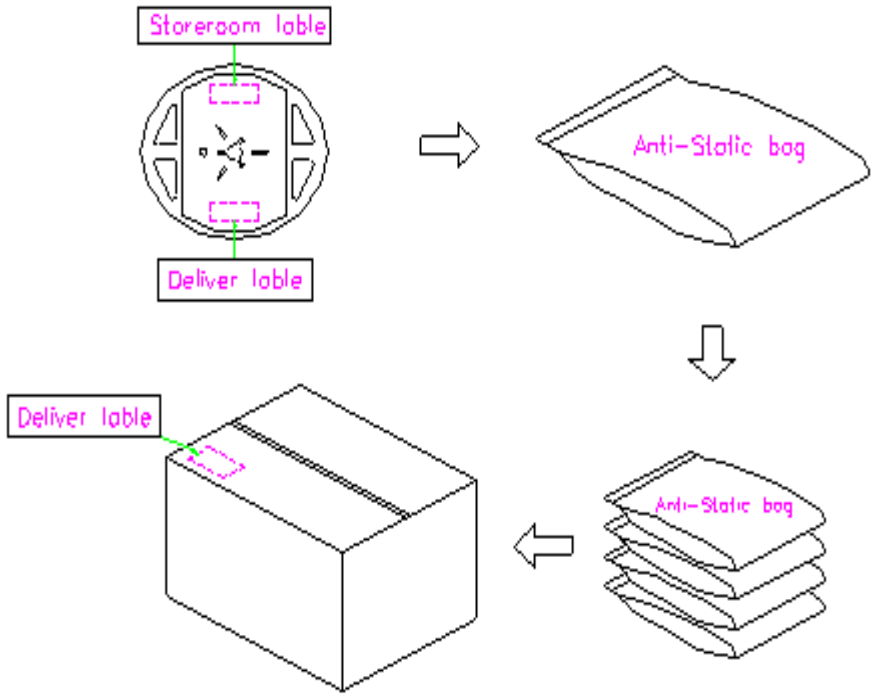


[NOTE]:

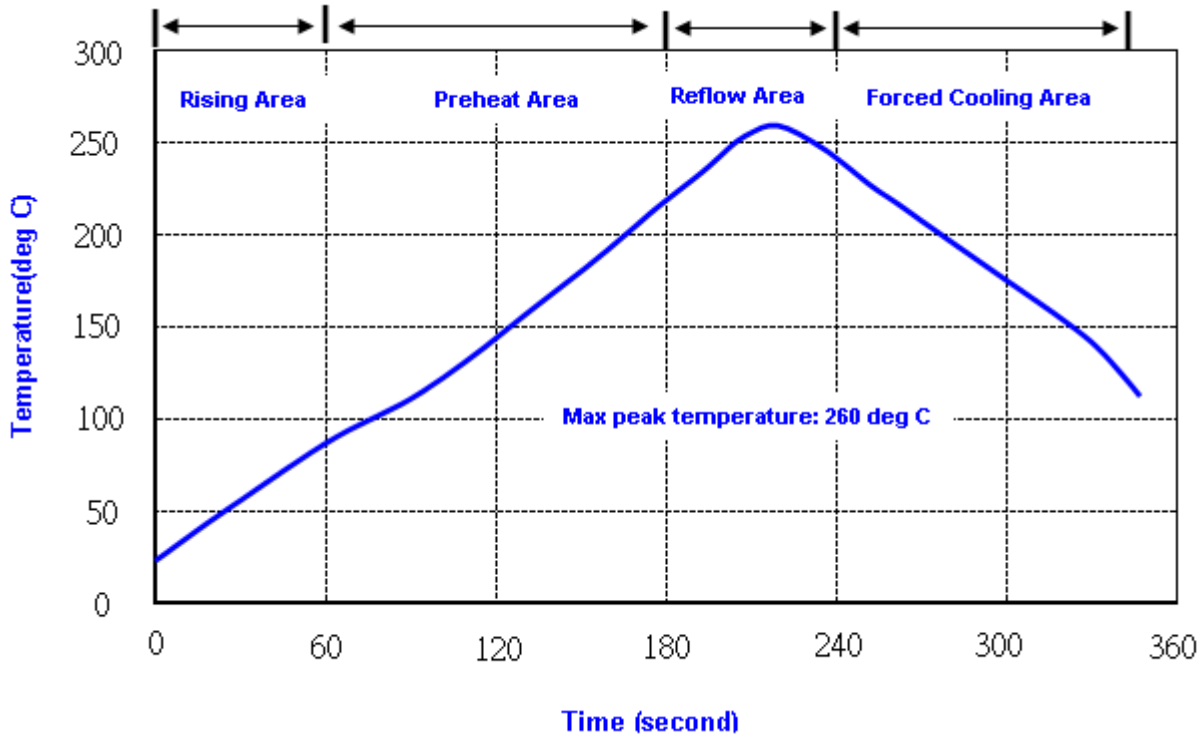
1. Unless otherwise specified tolerance on dimension +/-0.1 mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance +/-0.2 mm.

Packing Quantity/Packing:

1K pcs maximum per reel



Reflow Profile:



Note: 1.Max peak temperature: 260+/-5 deg C; Time: 10+/-2 sec

2. Temperature: 217+/-5 deg C; Time: 90~100 sec

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 : 1.5mm 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
Environmental characteristics		
Thermal Shock	Heat cycle conditions -40 ℃ (30min) ⟷ 85 ℃ (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