



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: Crystal Oscillator SMD 7.0x5.0 10MHz

TST Part No.: TW0471A

Customer Part No.: _____

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

Checked by: _____ Ginger Huang *Ginger Huang*

Approved by: _____ Kelly Huang *Kelly Huang*

Date: _____ 06/20/2013

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 7.0x5.0 10MHz Crystal Oscillator

MODEL NO.: TW0471A

REV. NO.: 1.0

Revise:

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	06/20/13'	N/A	Ginger Huang



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SMD 7.0x5.0 10MHz Crystal Oscillator

MODEL NO.: TW0471A

REV. NO: 1.0

Features:

- Surface Mount Seam Weld Package
- Excellent Reliability Performance
- Good Frequency Perturbation and Stability over temperature

RoHS Compliant
Lead free
Lead-free soldering

Application:

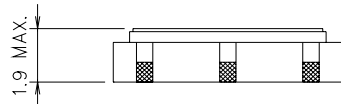
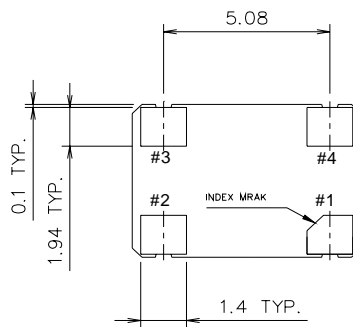
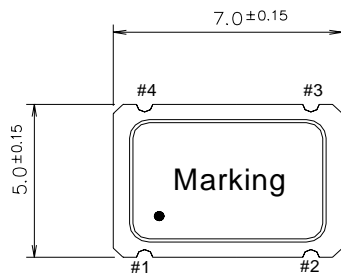
- 3.3 V Supply Voltage Operation / Complementary CMOS Output
- Option-able stand-by function for output (Tri-state output)
- Fundamental Crystal application

Electrical Characteristics:

TW0471A	Specifications
Nominal Frequency, Fo	10.000000 MHz
Storage Temperature Range	-55°C to +125°C
Operating Temperature Range	-10°C to +70°C
Power Supply Voltage, Vcc	3.3 V +/- 10%
Load	30 pF (CMOS)
“0” Level “1” Level	0.33 V max 2.97 V min
Power Supply Current, Icc	10 mA max
Frequency Accuracy ¹	+/-25 ppm max
Duty Cycle	45% ~ 55%
Start-up Time	10 ms max.
Phase Jitter	1.0 ps max
Rise Time (10% -> 90% of final RF level in Vp-p) Fall Time (90% -> 10% of final RF level in Vp-p)	8 nsec max. 8 nsec max.
Enable/Disable Function	PIN 1: High or Open, PIN 3:Enable PIN 1: Low, PIN 3:Disable

#Note 1: Frequency accuracy includes 25C tolerance, operating temperature range -10 to 70 deg C

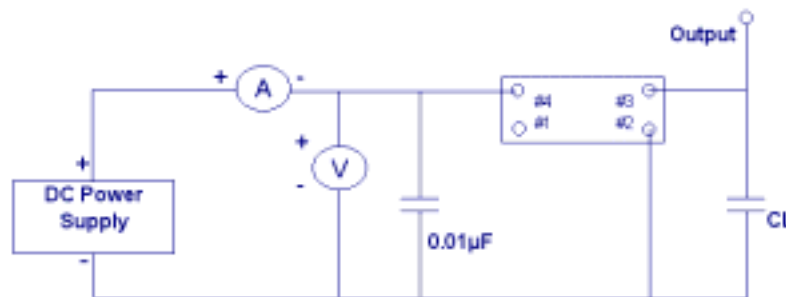
Mechanical Dimensions: (Unit: mm)



Pin Connection

- #1 OE
- #2 GND
- #3 Output
- #4 VDD

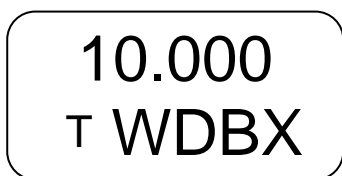
Test Circuit:



Marking:

Line 1 : Frequency (10.000)

Line 2 : $\text{\textcircled{T}}$ WDBX (TST logo + Product Code + Data Code + Traceability Code)



Product Code Table

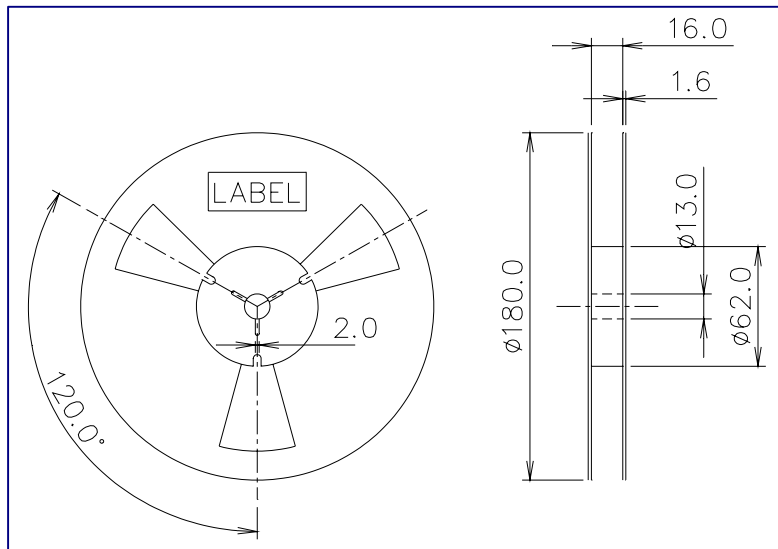
Year	2009	2010	2011	2012
	2013	2014	2015	2016
	2017	2018	2019	2020
Product Code	W	w	<u>W</u>	<u>w</u>

Date Code Table

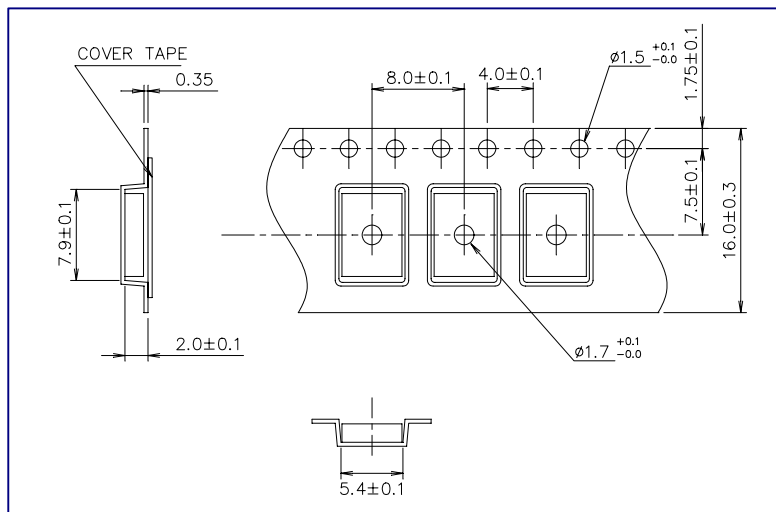
WK01	WK02	WK03	WK04	WK05	WK06	WK07	WK08	WK09	WK10	WK11	WK12	WK13
A	B	C	D	E	F	G	H	I	J	K	L	M
WK14	WK15	WK16	WK17	WK18	WK19	WK20	WK21	WK22	WK23	WK24	WK25	WK26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
WK27	WK28	WK29	WK30	WK31	WK32	WK33	WK34	WK35	WK36	WK37	WK38	WK39
a	b	c	d	e	f	g	h	i	j	k	l	m
WK40	WK41	WK42	WK43	WK44	WK45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

Packing:

■ Reel Dimension (Unit: mm)



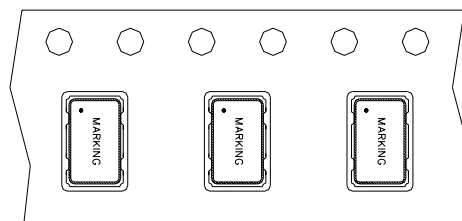
■ Tape Dimension (Unit: mm)



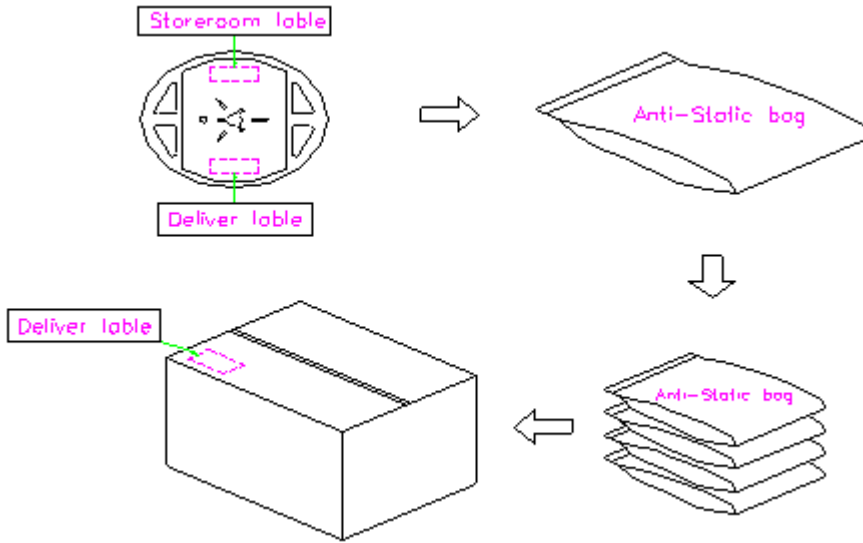
[NOTE]:

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.
4. Packing Direction: dot or the logo of marking should be close to the hole of tape.

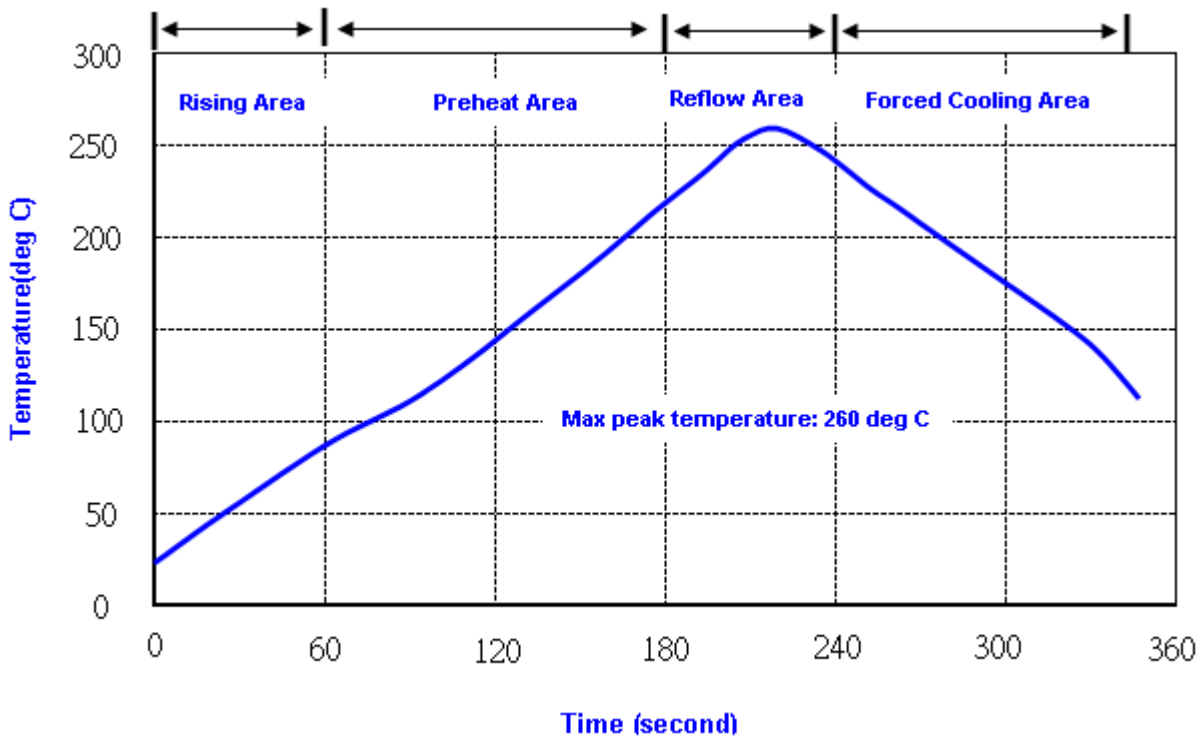
■ PACKING DIRECTION:



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

