



# 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)

## Approval Sheet For Product Specification

Issued Date: 11/07/2002

Product Name: SMD Clock Oscillator 22.0 MHz

TST Parts No.: TW0124A

Customer Parts No.: \_\_\_\_\_

Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: \_\_\_\_\_ Robert Chang

Approval by: \_\_\_\_\_ T.F. Yang / Mark Chen

Date: \_\_\_\_\_ 2002/11/07



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## SMD Clock Oscillator 22.0 MHz

MODEL NO.: TW0124A

REV. NO.: 1

### A. FEATURES:

1. Ultra small package
2. Excellent for high-density packaging.

RoHS Compliant  
Lead free  
Lead-free soldering

### B. MAXIMUM RATING:

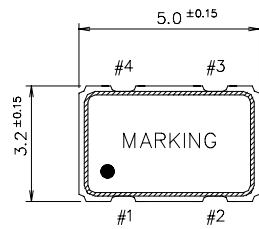
1. DC Voltage: 12 VDC.
2. Storage Temperature: -40 °C to +85 °C.
3. Operating Temperature:-0 °C to +70 °C.

### C. ELECTRICAL CHARACTERISTICS:

Characteristics	Units	Minimum	Typical	Maximum
Center Frequency	<b>MHz</b>		22.000	
Frequency Stability (#note 1)	<b>PPM</b>	-25	-	25
Input Voltage (Operating VDD)	<b>VDC</b>	-	2.85+/-10%	-
Input Current	<b>mA</b>	-	-	12
Output				
Load	<b>pF</b>	-	15	-
"0" Level	<b>VDC</b>	-	-	0.285
"1" Level	<b>VDC</b>	2.565	-	-
Symmetry (TW/T*100%) Duty Cycle	<b>%</b>	40%	-	60%
Rise Time (10%->90% VDD)	<b>nSec</b>	-	-	10
Fall Time (90%->10% VDD)	<b>nSec</b>	-	-	10
Enable/Disable Function		PIN 1: High or Open, PIN 3:Enable PIN 1: Low, PIN 3:Disable		
Package size		SMD5.0X3.2X1.1mm		

#Note 1: Frequency stability includes 25C tolerance, operating temperature range, aging and voltage or load change.

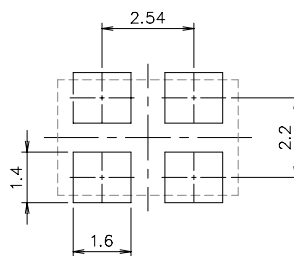
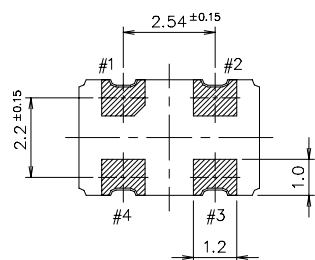
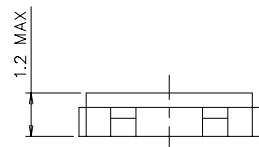
**D. OUTLINE DRAWING: (Unit: mm)**



UNIT: mm

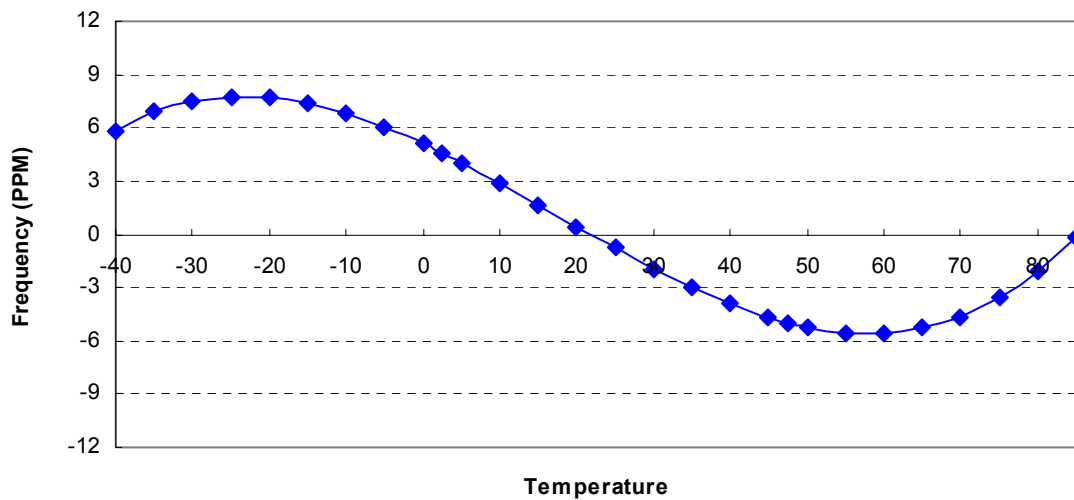
PIN# FUNCTION

PIN#	FUNCTION
1	NO CONNECT/3-STATE
2	CIRCUIT AND COVER GROUND
3	OUTPUT
4	VDD

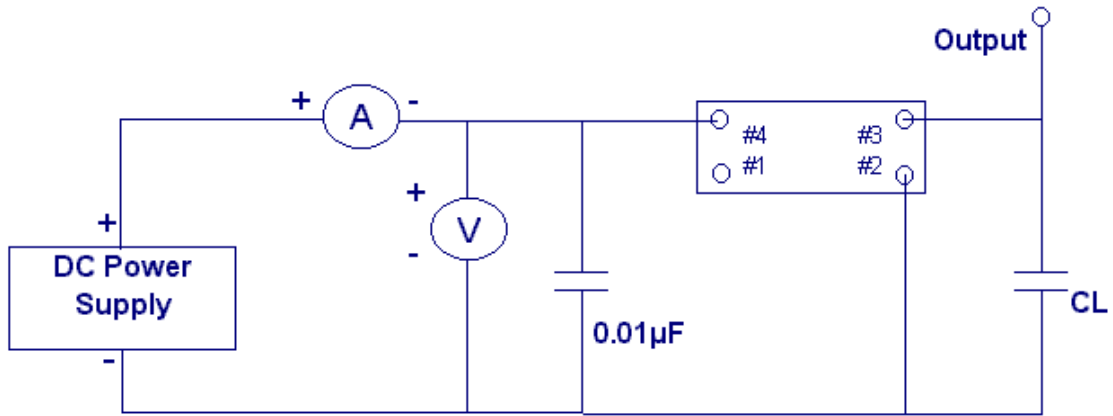


Recommended Soldering Pattern

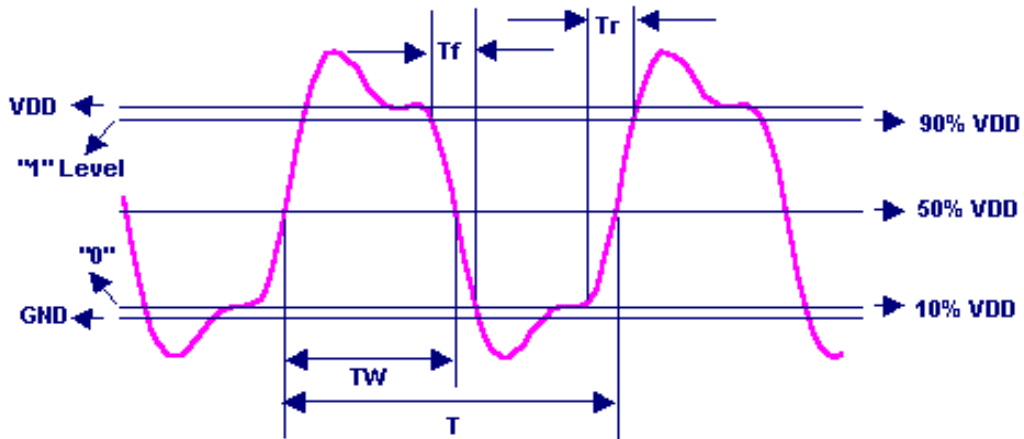
**E. FREQUENCY STABILITY OVER TEMPERATURE (TYPICAL):**



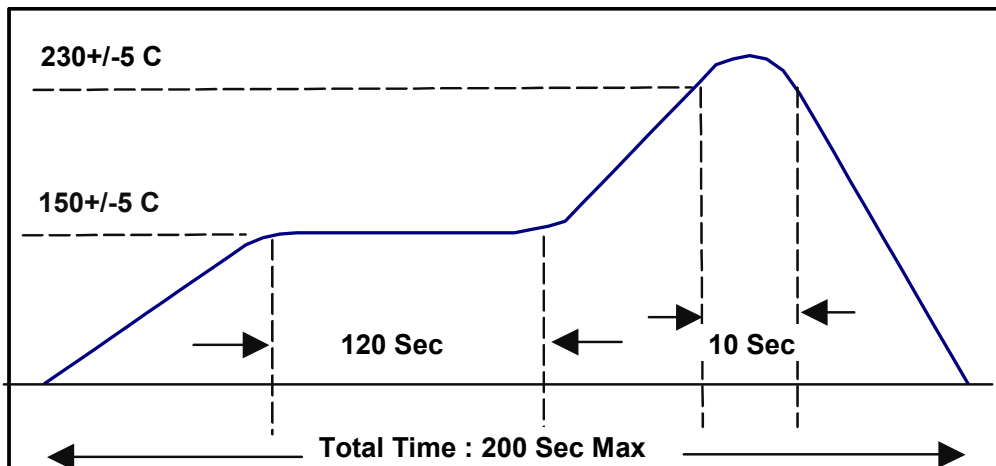
F. TEST CIRCUIT:



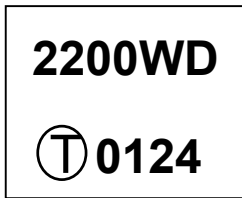
G. OUTPUT WAVEFORM (TYPICAL):



H. SOLDERING REFLOW PROFILE:



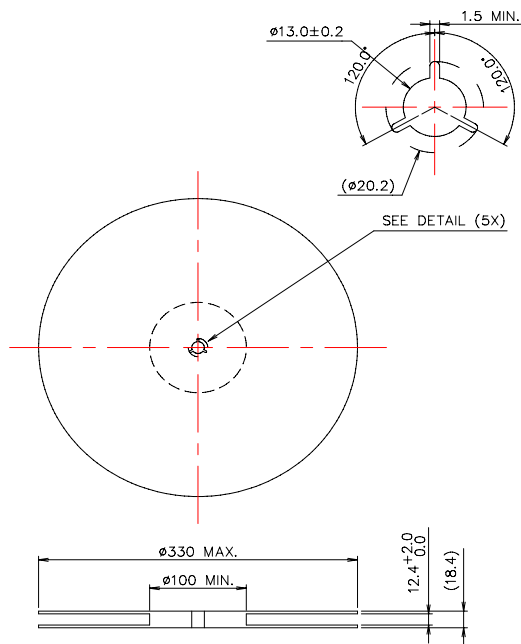
I. MARKING:



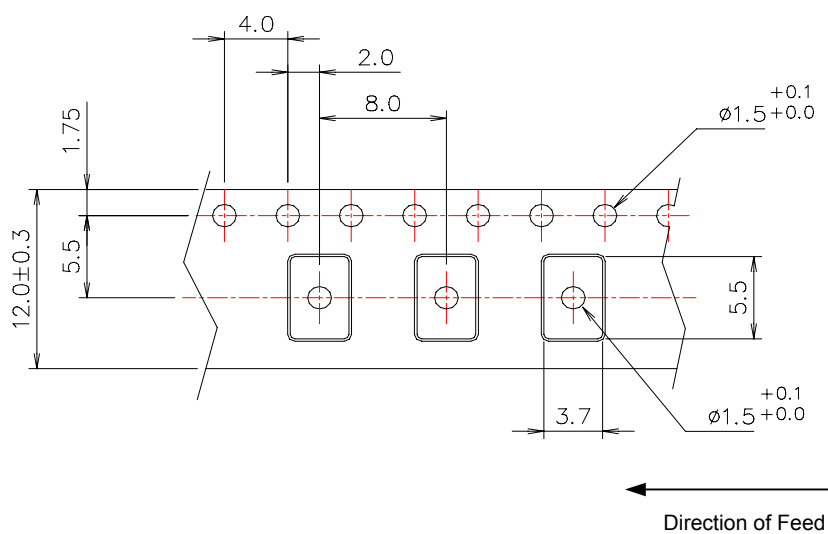
Where D stands for date code

J. PACKING:

1. REEL DIMENSION (Unit: mm)



2. TAPE DIMENSION (Unit: mm)



3. PACKING DIRECTION

The dot or the logo of marking should be close to the hole of tape.