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 2.0x1.6 24.5454MHz

TST Part No.: TW0439A

Customer Part No.:_____

Customer signature required

Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by: Ginger Huang Ginger Huang

Approved by: Kelly Huang Kelly Huang

Date: 02/16/2012

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 2.0x1.6 24.5454MHz Crystal Oscillator

MODEL NO.: TW0439A REV. NO.: 1.0

Revise:

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	02/16/12’	N/A	Ginger Huang

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SMD 2.0x1.6 24.5454MHz Crystal Oscillator

MODEL NO.: TW0439A REV. NO: 1.0

Features:

RoHS Compliant
Lead free
Lead-free soldering

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

Application:

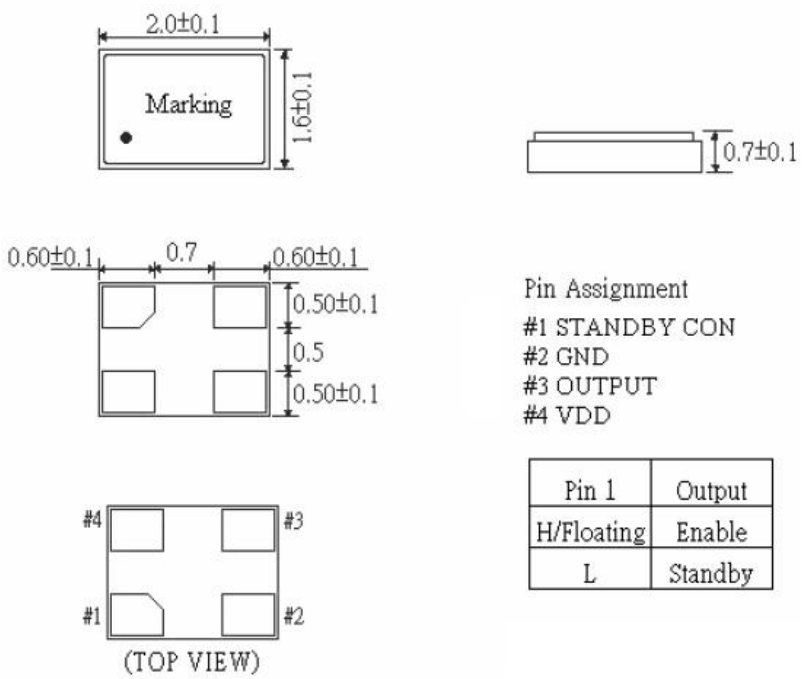
- 2.8 V Supply Voltage CMOS Output
- Option-able stand-by function for output .

Electrical Characteristics:

TW0439A	**Specifications**
Nominal Frequency, Fo	24.545400 MHz
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-40°C to +85°C
Power Supply Voltage, Vcc	2.8 V +/- 0.14V
Load	15pF
Power Supply Current, Icc	10 mA max
Frequency Accuracy[1]	+/-25 ppm max
Duty Cycle	45% ~ 55%
Rise Time (10% -> 90% of final RF level in Vp-p) Fall Time (90% -> 10% of final RF level in Vp-p)	5 nsec max. 5 nsec max.
Output Voltage (High) Output Voltage (Low)	VoH: 0.8 VDD min VoL: 0.2 VDD max
Aging	+/-3ppm/ year
Enable/Disable Function	PIN 1: High or Open, PIN 3:Output Enable PIN 1: Low, PIN 3:Output Disable

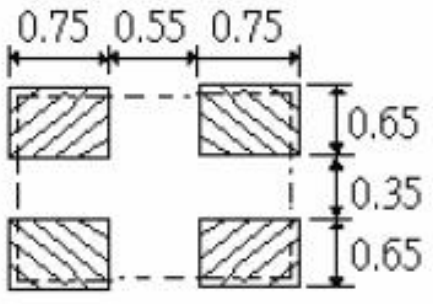
#Note 1: Frequency accuracy includes 25C tolerance, operating temperature range -40 to 85 deg C, first year of aging and voltage or load change.

Mechanical Dimensions: (Unit: mm)

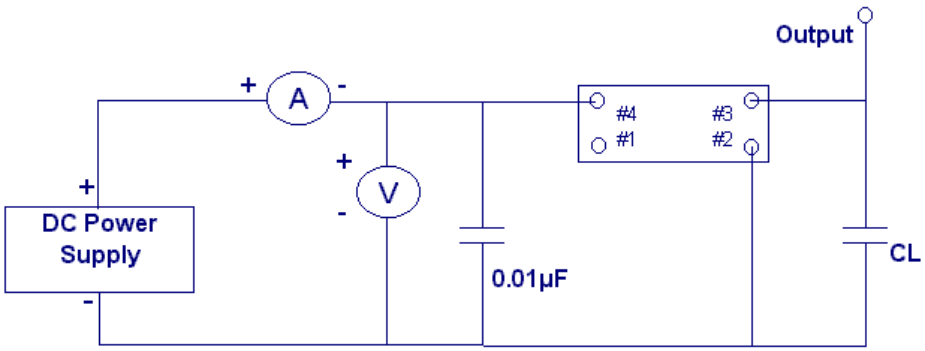


Pin 1	Output
H/Floating	Enable
L	Standby

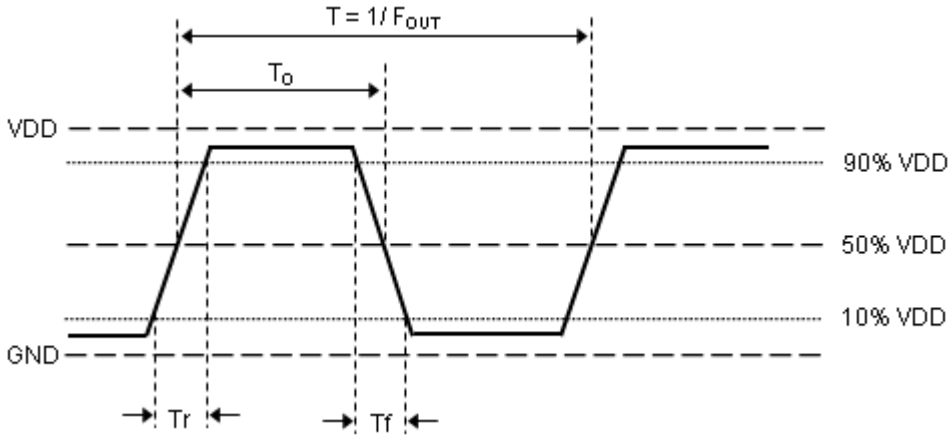
Recommended Land Pattern: (unit: mm)



Test Circuit:



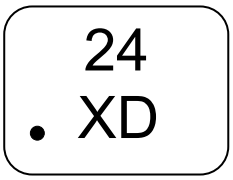
Output Waveform :



Marking:

Line 1:Frequency (24)

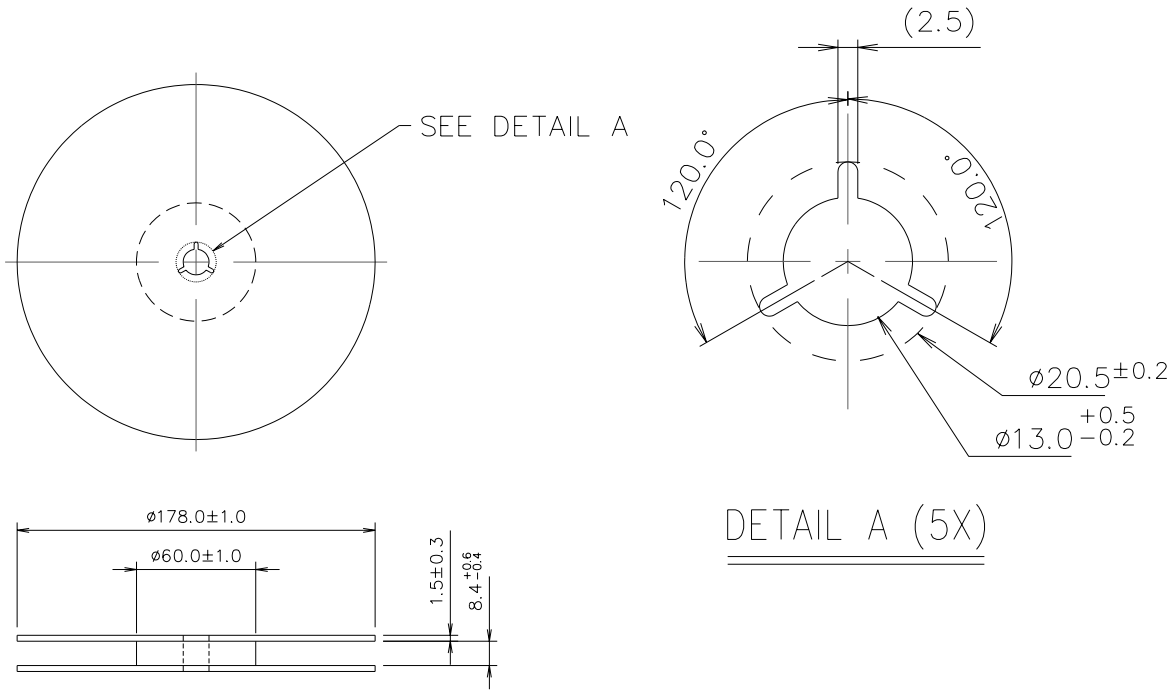
Line 2: XD (pin #1 dot + Traceability Code+ Date Code of Year / Month)



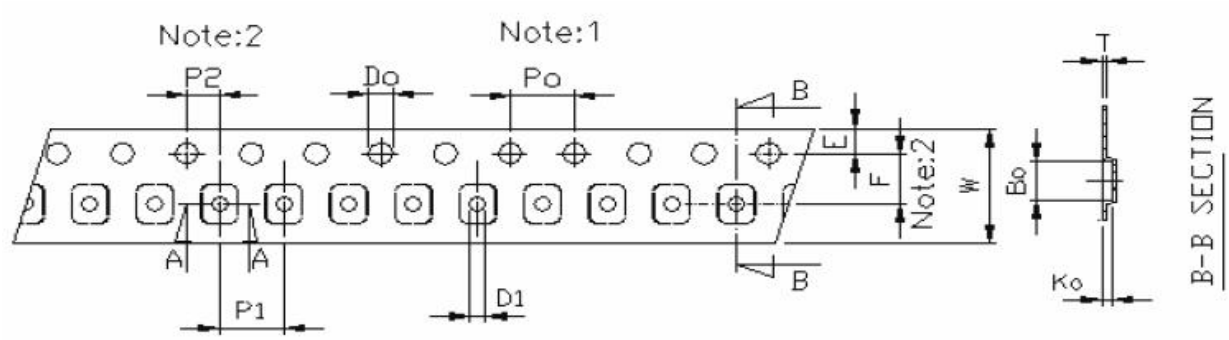
Date Code Table: Year / Month

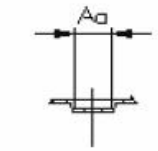
Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2009	n	p	q	r	s	t	u	v	w	x	y	z
2010	A	B	C	D	E	F	G	H	J	K	L	M
2011	N	P	Q	R	S	T	U	V	W	X	Y	Z
2012	a	b	c	d	e	f	g	h	i	j	k	m
2013	n	p	q	r	s	t	u	v	w	x	y	z
2014	A	B	C	D	E	F	G	H	J	K	L	M
2015	N	P	Q	R	S	T	U	V	W	X	Y	Z
2016	a	b	c	d	e	f	g	h	i	j	k	m
2017	n	p	q	r	s	t	u	v	w	x	y	z
2018	A	B	C	D	E	F	G	H	J	K	L	M
2019	N	P	Q	R	S	T	U	V	W	X	Y	Z
2020	a	b	c	d	e	f	g	h	i	j	k	m
2021	n	p	q	r	s	t	u	v	w	x	y	z

Reel Dimensions (mm):



Tape Dimensions (mm):





Ao= 1.85±0.10 mm

Bo= 2.25±0.10 mm

Ko= 0.95± 0.10 mm

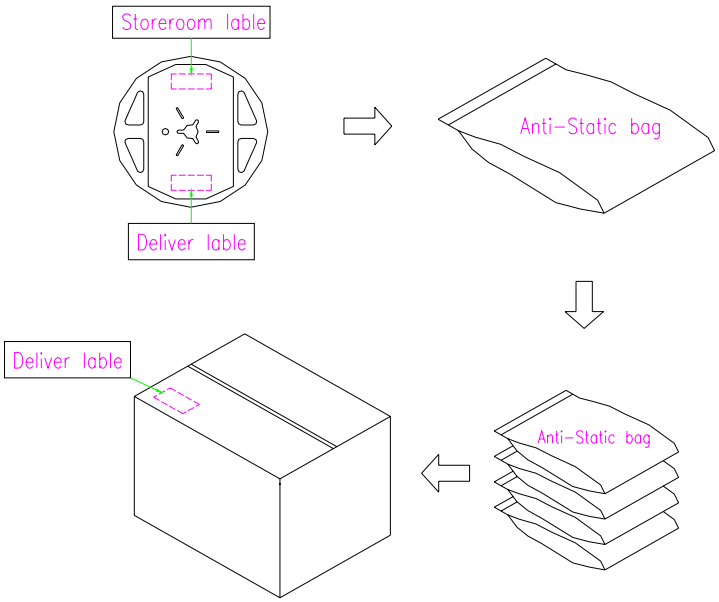
Unit: mm	W	F	E	Po	P1	P2	D1	Do	10Po	T
Dimension	8.00	3.50	1.75	4.00	4.00	2.00	1.05	1.50	40.00	0.25
Tolerance	±0.2	±0.05	±0.1	±0.1	±0.1	±0.05	±0.05	±0.05	±0.2	±0.05

[NOTE]:

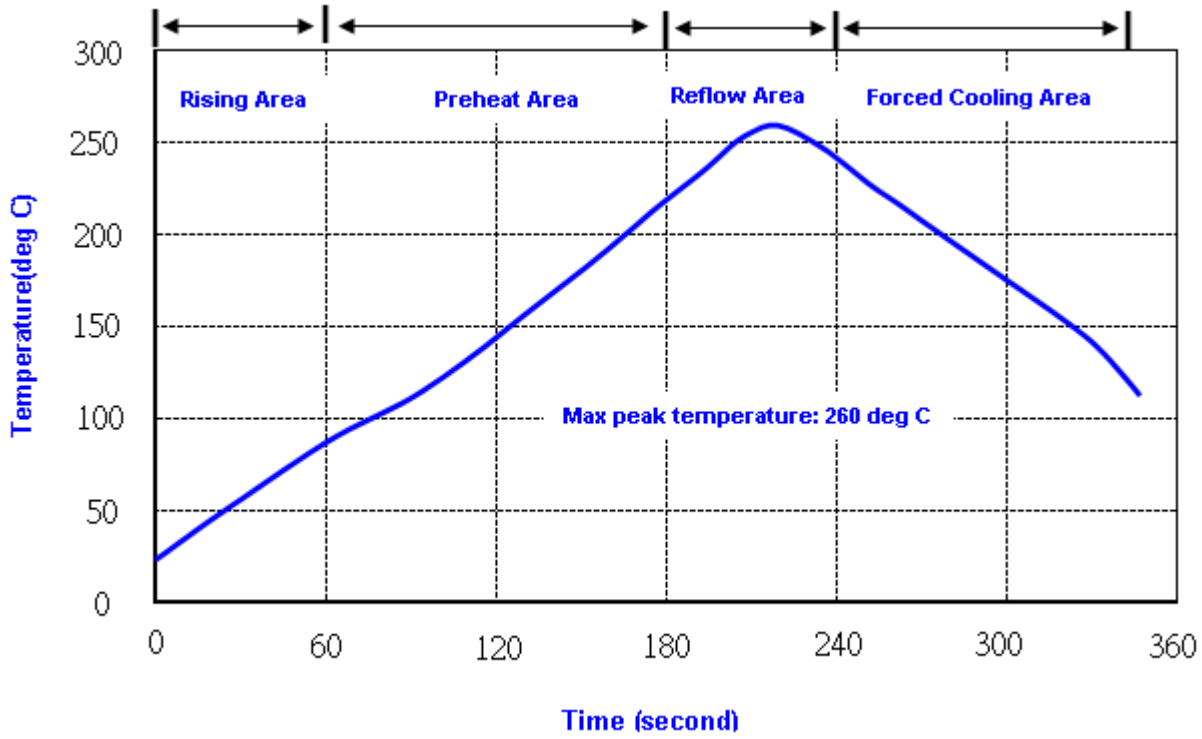
1. Unless otherwise specified tolerance on dimension +/-0.1 mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance +/-0.2 mm.

Packing Quantity/Packing:

3K 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 : 260°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 55 Hz Sweep period : 1.0 minute Vibration directions : 3 mutually perpendicular Duration : 2 hr / direc.	MIL-STD 202F method 201A
Mechanical Shock	directions : 3 impacts per axis Acceleration : 3000g's, +20/-0 % Duration : 0.3 ms (total 18 shocks) Waveform : Half-sine	MIL-STD 202F method 213C
Solderability	Solder Temperature:265±5°C Duration time: 5±0.5 seconds.	MIL-STD 883G method 2003
Environmental characteristics		
Thermal Shock	Heat cycle conditions -55 ℃ (30min) ⟷ 125 ℃ (30min) * cycle time : 10 times	MIL-STD 883G method 1010.7
Humidity test	Temperature : 70 ± 2 °C Relative humidity : 90~95% Duration : 96 hours	MIL-STD 202F method 103B
Dry heat (Aging test)	Temperature : 125 ± 2 °C Duration : 168 hours	MIL-STD 883G method 1008.2 condition C
PCT test	Pressure: 2.06kg/cm^2 (2.03*10^5 pa) Temperature : 121 ± 2 °C Relative humidity : 100% Duration : 24 hours	EIAJED-4701-3 B-123A