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
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Product Specifications Approval Sheet

Product Name: Crystal Oscillator SMD 2.0x1.6 50.0MHz

TST Parts No.: TW0656UA1252

Customer Parts No. :_____

Company:_____

Division:_____

Approved by:_____

Date:_____

Checked by: Tom Liu

Approval by: Kelly Huang

Date: 01/13/2023

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.

MODEL NO.: TW0656UA1252 REV. NO.:1

Revise:

Rev.	Rev.Page	Rev. Account	Date	Ref. No.	Reviser
1	N/A	Initial release	01/13/23’	N/A	Tom Liu

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SMD 2.0x1.6 50.0MHz Crystal Oscillator

MODEL NO.: TW0656UA1252 REV. NO: 1

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:

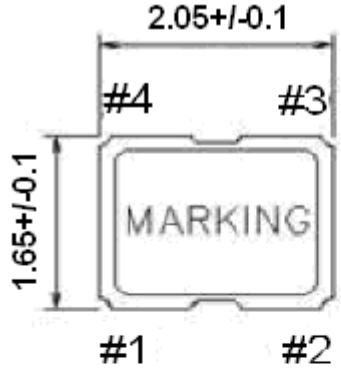
- Supply Voltage CMOS Output
- Option-able stand-by functions for output.

Electrical Characteristics:

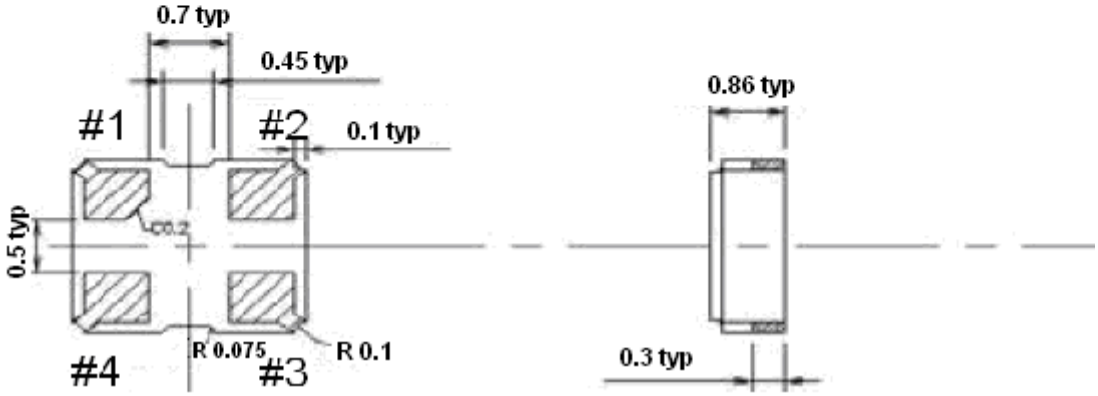
TW0656UA1252	**Specifications**
Nominal Frequency, Fo	50.000000 MHz
Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-40°C to +85°C
Power Supply Voltage, Vcc	1.8V +/- 5%
Load	15pF
Voltage Levels “0” Level “1” Level	10% Vcc max 90% Vcc min
Power Supply Current, Icc	25 mA max
Frequency 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)	10 nsec max.
Enable/Disable Function(Voltage Level)	PIN 1: Vih:70%Vcc min or Open, PIN 3: Output Enable PIN 1: Vil:30%Vcc max, PIN 3:Output Disable

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

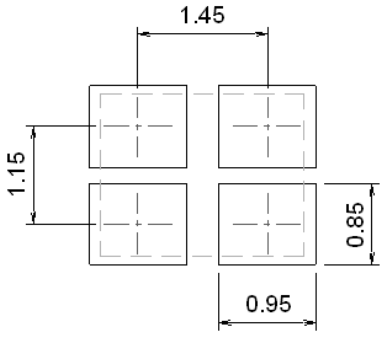
Mechanical Dimensions: (Unit: mm)



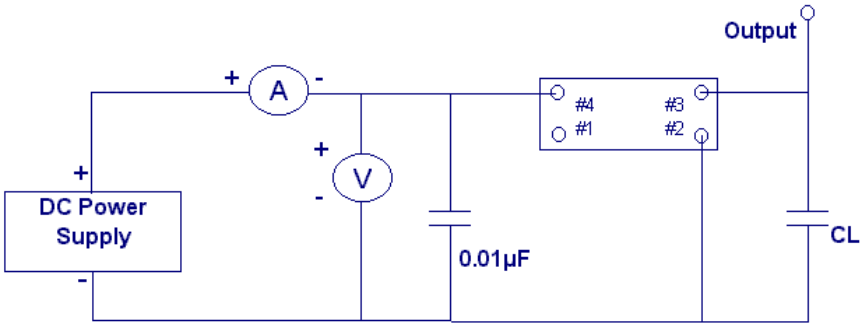
	Pin Connection
Pin #1	OE
Pin #2	GND
Pin #3	Output
Pin #4	Vdd



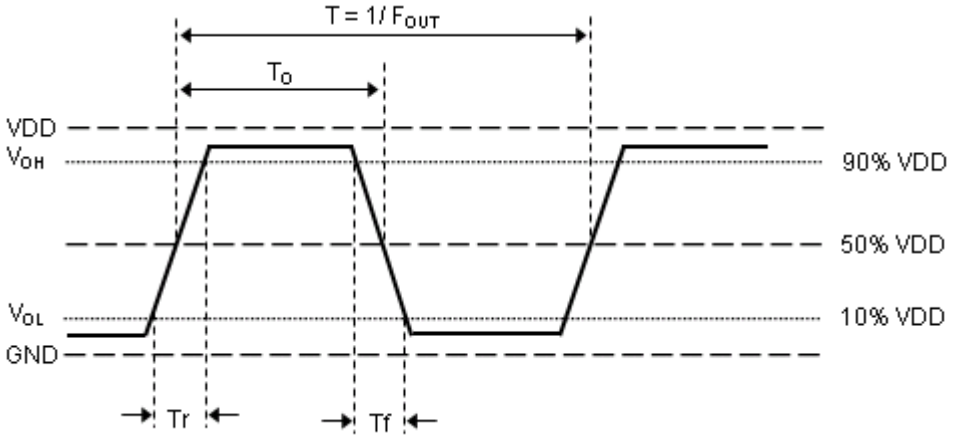
Recommended Land Pattern: (unit: mm)



Test Circuit:



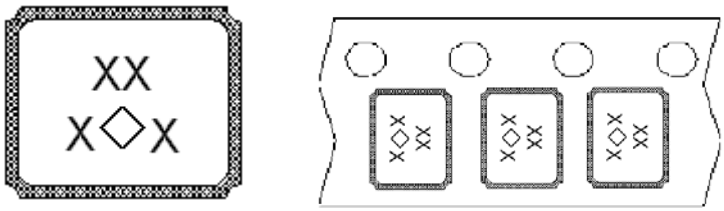
Output Waveform :



Marking:

Line 1: **XX：50 (**Frequency)

Line 2: **X◇X**：TST Traceability code + ◇：Date Code + Traceability code(1 or no letter)

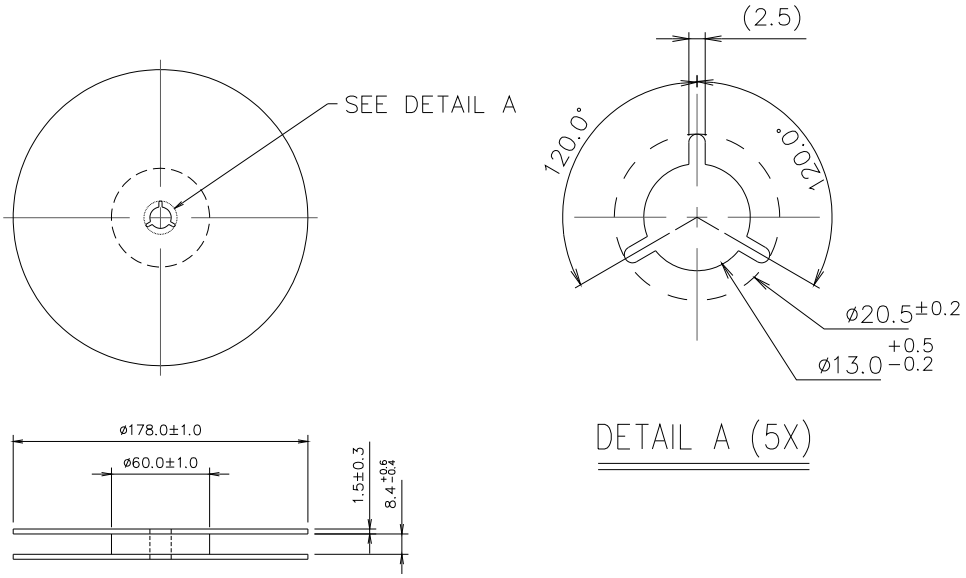


◇：Date Code Table: Year/Month

Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2022	A	B	C	D	E	F	G	H	J	K	L	M
2023	N	P	Q	R	S	T	U	V	W	X	Y	Z
2024	a	b	c	d	e	f	g	h	i	j	k	m
2025	n	p	q	r	s	t	u	v	w	x	y	z
2026	A	B	C	D	E	F	G	H	J	K	L	M
2027	N	P	Q	R	S	T	U	V	W	X	Y	Z
2028	a	b	c	d	e	f	g	h	i	j	k	m
2029	n	p	q	r	s	t	u	v	w	x	y	z
2030	A	B	C	D	E	F	G	H	J	K	L	M
2031	N	P	Q	R	S	T	U	V	W	X	Y	Z
2032	a	b	c	d	e	f	g	h	i	j	k	m
2033	n	p	q	r	s	t	u	v	w	x	y	z
2034	A	B	C	D	E	F	G	H	J	K	L	M
2035	N	P	Q	R	S	T	U	V	W	X	Y	Z

Packing:

- **Packing Quantity : 3K Pcs / Reel**
- **Reel Dimension (Unit: mm)**



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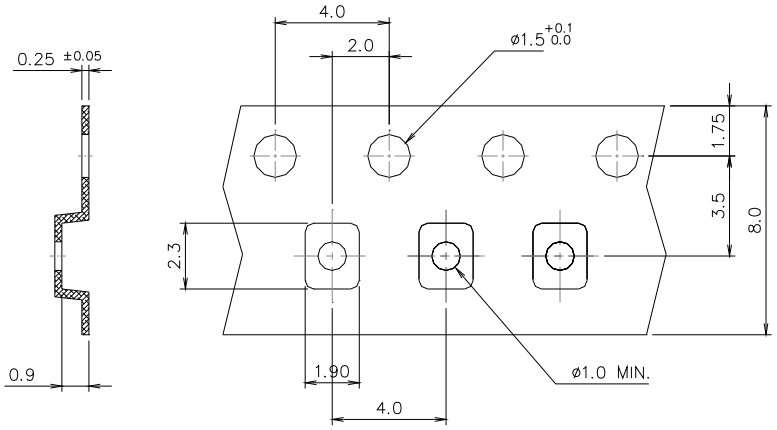
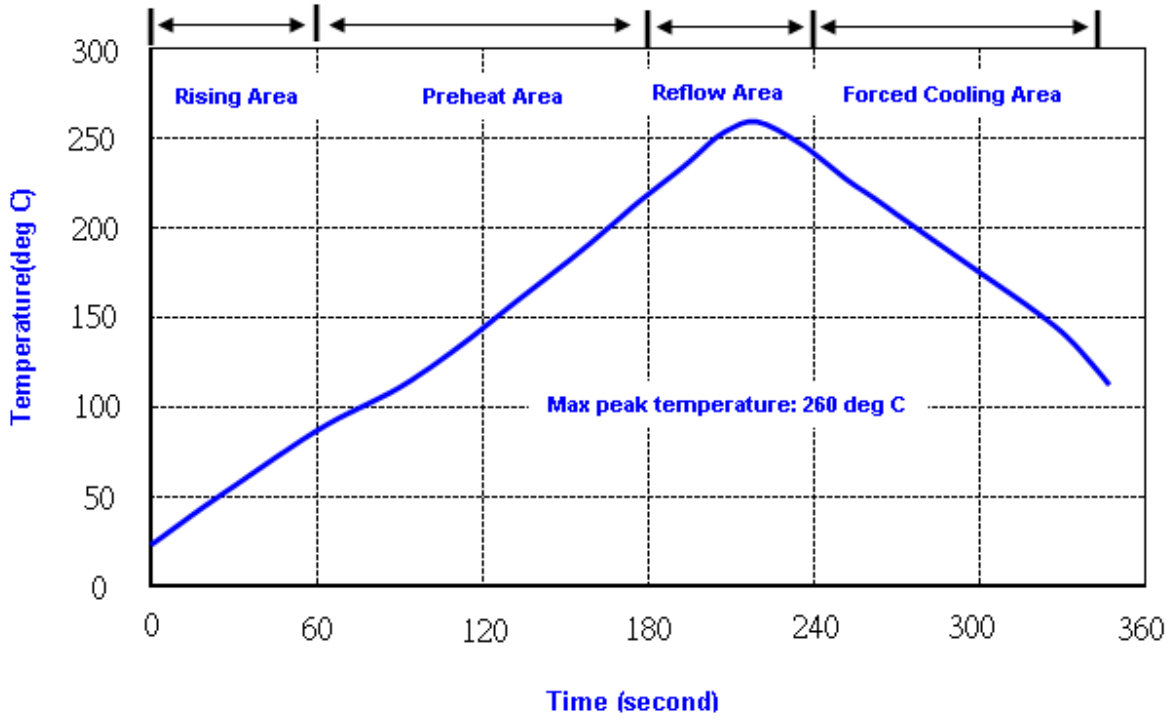
- **Tape Dimension (Unit: mm)**



[NOTE]: Direction of Feed

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.

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