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 2.0x1.6 156.25MHz

TST Part No.: TW0760XAAH50

Customer Part No.:_____

Customer signature required

Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by: Glen Peng

Approved by: Yifan Chen

Date: 03/13/2024

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
1	N/A	Initial release	03/13/24’	N/A	Glen Peng

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SMD 2.0x1.6 156.25MHz Crystal Oscillator

MODEL NO.: TW0760XAAH50 REV. NO: 1.0

Features:

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

Application:

- Supply Voltage HCSL Output
- Option-able stand-by function for output .

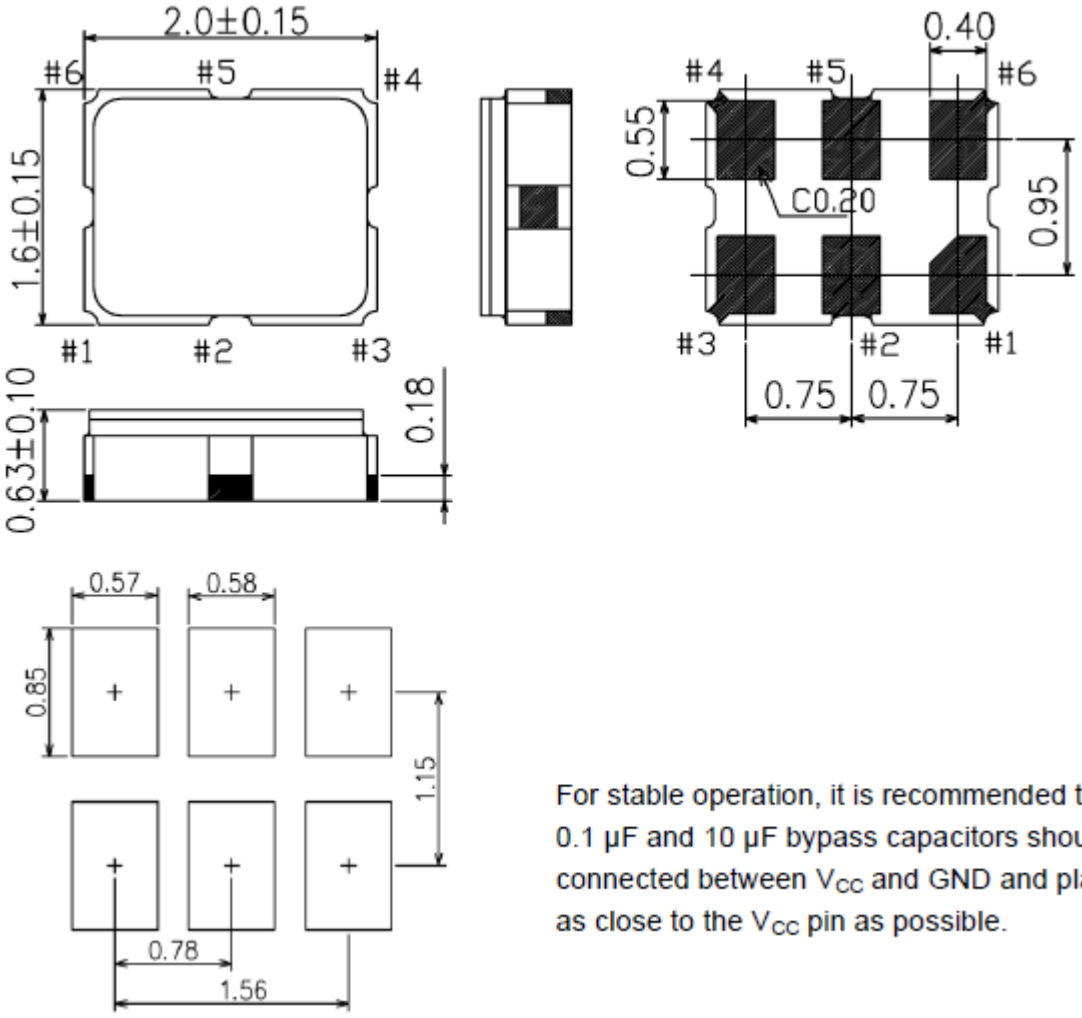
Electrical Characteristics:

	Paramenters	SYM.	Electrical Spec.				Notes
			Min.	Typical	Max.	Unit	
1	Output Frequency	Fo	156.250000			MHz	
2	Maximum supply voltage	VCC	-0.3		+4.0	V	
3	Input voltage	VIN	-0.3		Vcc+0.5	V	OE terminal
4	Supply Voltage	VCC	3.135	3.3	3.465	V	
5	Storage Temperature	T_stg	-55		125	℃	
6	Operating Temperature	T_use	-40		105	℃	
7	Output Load	RL		50		Ω	Terminated to GND
8	Frequency tolerance *1	f_tol	-25		25	ppm	
9	Star -up Time	t_str			10	m Sec.	t = 0 at 90 % Vcc
10	Current Consumption	ICC			35	mA	
11	Disable current	I_dis			25	mA	OE=GND
12	Output Voltage High " 1 "	Voh	0.6		0.8	V	
13	Output Voltage Low " 0 "	VoL	-0.15		0.15	V	
14	Differential Swing	VSW	0.8		1.6	V	Differential output peak to peak voltage
15	Rise Time &Fall Time	Tr , Tf			0.7	n Sec.	20% ←→ 80 % of (VOH - VOL)

16	**Differential output rise slew rate / fall slew rate**	**Rr/Rf**	2		10	**V/ns**	Between -0.15 V and 0.15 Vof differential output
17	**Symmetry**	**SYM**	45	50	55	**%**	At output crossing point
18	**Input Voltage**	**V_{IH}**	70%Vcc			**V**	OE terminal
		V_{IL}			30%Vcc	**V**	OE terminal
19	**Output disable time (OE)**	**tstp_oe**			100	**ns**	OE terminal HIGH → LOW
20	**Output enable time (OE)**	**tsta_oe**			500	**ns**	OE terminal LOW → HIGH
21	**Phase Jitte**	**t_{PJ}**			70	**fs**	Offset freq.: 12 kHz to 20 MHz
22	**Phase Jitte**	**t_{PJ}**			100	**fs**	Offset freq.: 12 kHz to 40 MHz
					70	**fs**	Offset freq.: 12 kHz to 1 MHz
					60	**fs**	Offset freq.: 1 MHz to 5 MHz
					75	**fs**	Offset freq.: 1 MHz to 20 MHz
					85	**fs**	Offset freq.: 20 MHz to 78 MHz
					125	**fs**	Offset freq.: 12 kHz to 70 MHz
23	**Jitter**	**Tc-c**			60	**ps**	Cycle to cycle jitter (Peak to Peak)
24	**PCIe jitter limits for CC architecture**				0.1	**ps**	For PCIe Gen5
					0.06	**ps**	For PCIe Gen6

***1 Frequency tolerance includes Initial frequency tolerance, Frequency / temperature characteristics, Frequency / voltage coefficient and aging (10 years, +25 ºC).**

Mechanical Dimensions: (Unit: mm)



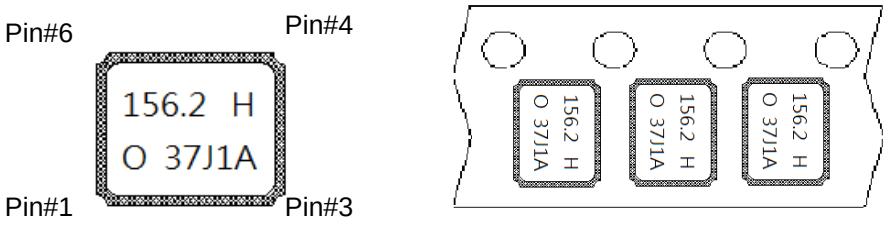
For stable operation, it is recommended that 0.1 µF and 10 µF bypass capacitors should be connected between V_{CC} and GND and placed as close to the V_{CC} pin as possible.

Pin #	Connection	Function		
#1	OE	OE terminal		
		OE function	Osc. circuit	Output
		"H" or OPEN	Oscillation	Specified frequency: Enable
		"L"	Oscillation	High impedance: Disable
#2	NC	—		
#3	GND	GND terminal		
#4	OUT	Output terminal (Positive)		
#5	$\overline{OUT}$	Output terminal (Negative)		
#6	V_{CC}	V_{CC} terminal		

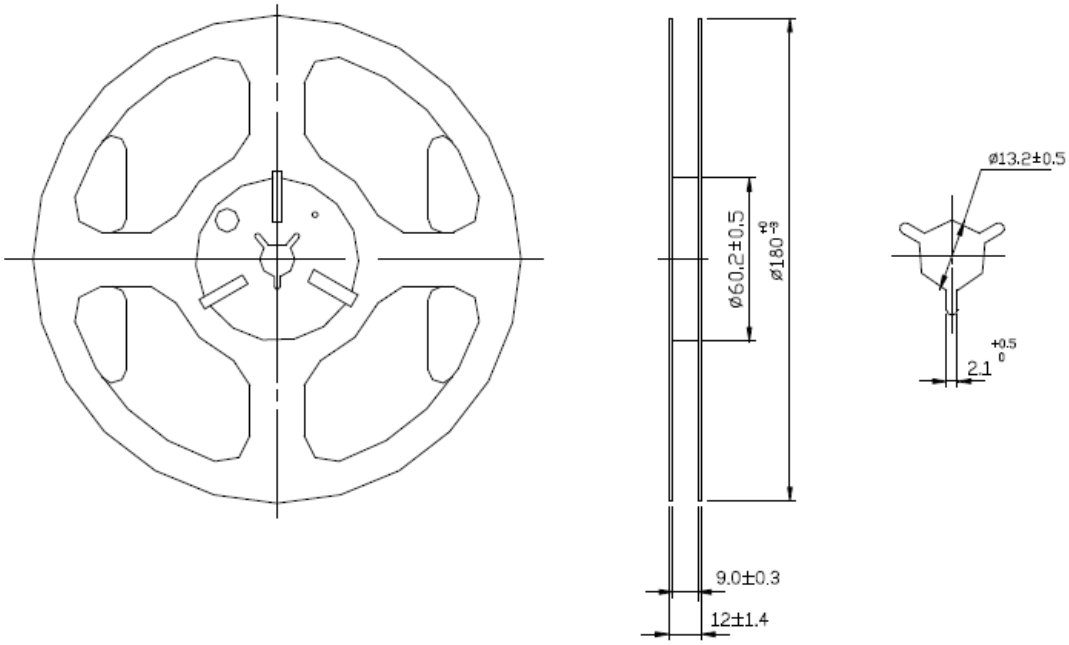
Marking:

Line 1: 156.2 H

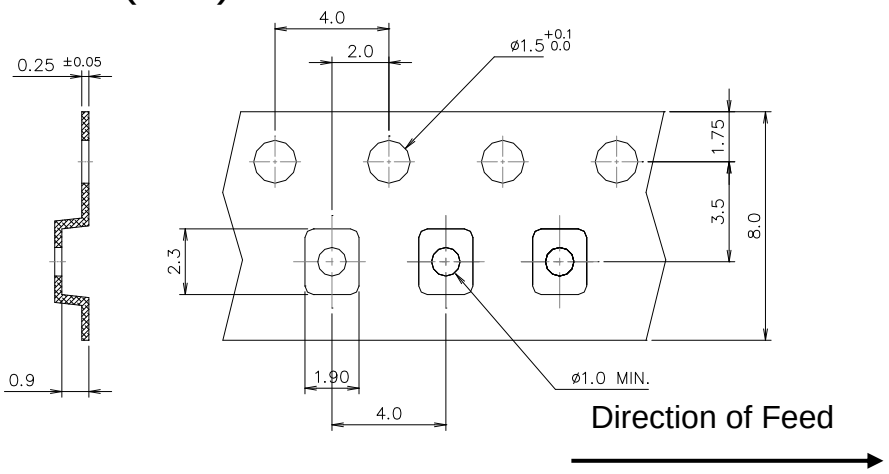
Line 2: O(Pin#1) + 37J1A(Production Lot Number)



Reel Dimensions (mm):



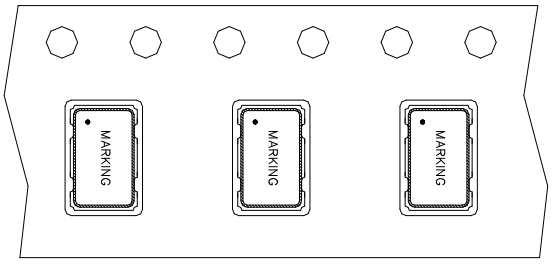
Tape Dimensions (mm):



[NOTE]:

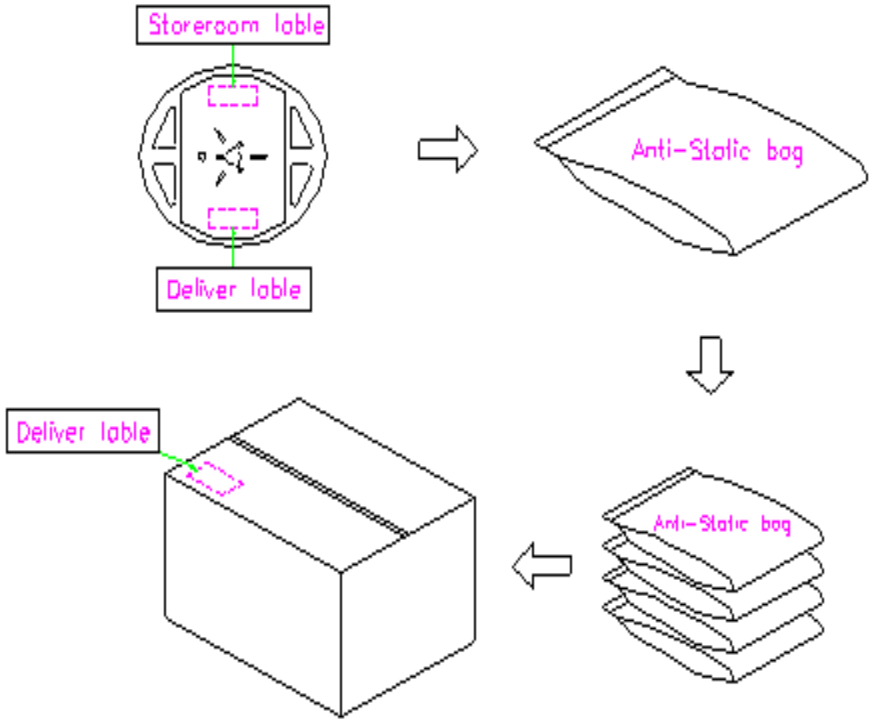
1. Unless otherwise specified tolerance on dimension +/-0.1 mm.
2. Material: conductive polystyrene with color black
3. 10 pitch cumulative tolerance +/-0.2 mm.
4. Packing Direction: dot or the logo of marking should be close to the hole of tape.

Packing direction

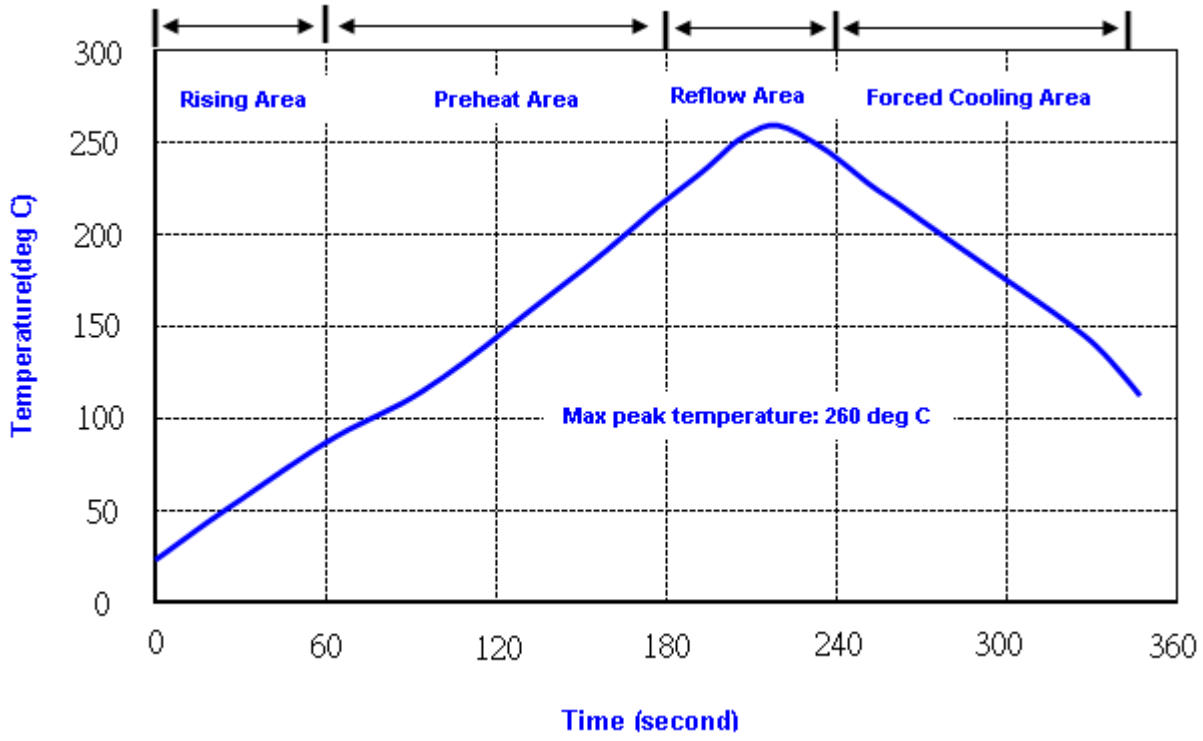


Packing Quantity/Packing:

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 : 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