



# TAI-SAW TECHNOLOGY CO., LTD.

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## Product Specifications Approval Sheet

Product Description: Crystal Unit SMD 2.05x1.65 66.666666MHz

TST Part No.: TZ3354F

Customer Part No.: B1484 : MX776CB-7.5-66.666666M

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

Checked by: \_\_\_\_\_ Chivalry Lin *Chivalry*

Approved by: \_\_\_\_\_ Kelly Huang *Kelly Huang*

Date: \_\_\_\_\_ 11/08/2018

- 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.**  
Crystal Unit SMD 2.0x1.6 66.66666MHz

2/8

MODEL NO.: TZ3354F

REV. NO.: 4

**Revise:**

Rev.	Rev. Page	Rev. Account	Date	Ref. No.	Revised by
1	N/A	Initial release	11/27/17'	N/A	Chivalry Lin
2	1~3	Update title Crystal Unit SMD size	05/24/18'	ECN-201800230	Chivalry Lin
3	3	Change Tolerance to 5+/-20 ppm	10/08/18'	ECN-201800344	Chivalry Lin
4	3	Change Tolerance to 7.5+/-12.5 ppm	11/08/18'	ECN-201800456	Chivalry Lin



# TAI-SAW TECHNOLOGY CO., LTD.

## Crystal Unit SMD 2.0x1.6 66.666666MHz

MODEL NO.: TZ3354F

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### Features:

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

RoHS Compliant  
Lead free  
Lead-free soldering

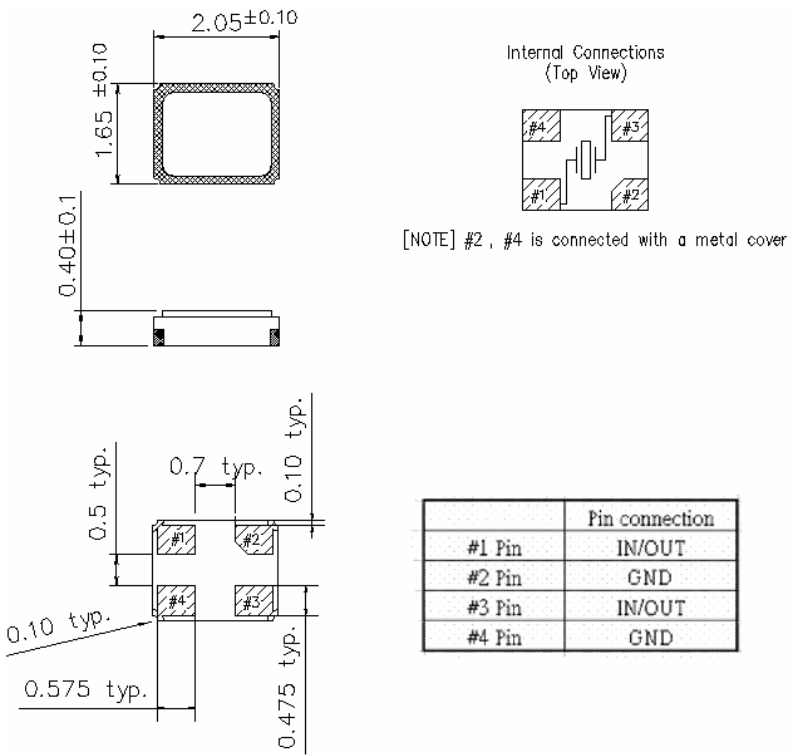
### Description and Applications:

Surface mount 2.0mmx1.6mm crystal unit for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

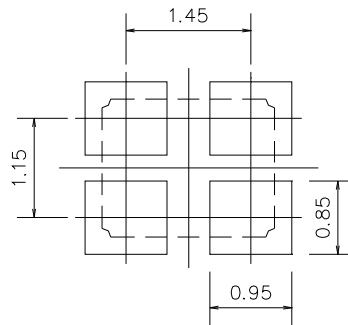
### Electrical Specifications:

TZ3354F	Specification
Nominal Frequency	66.666666 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-55°C to +125°C
Operating Temperature Range	-35°C to +85°C
Frequency Stability over Operating Temperature Range	+/-20 ppm (referred to the value at 25°C)
Frequency Make Tolerance (FL)	7.5+/-12.5ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	65 Ω max
Nominal Drive Level	10uW typical and 100uW max
ESR Change due to Drive Level:	5Ω Max, 1uW-100uW
Frequency Shift due to Drive Level:	5ppm Max, 1uW-100uW
Shunt Capacitance (Co)	1.6 pF max
Load Capacitance (CL)	7.5 pF
Aging	+/-3ppm/yr first year then <1ppm/yr
Insulation Resistance	500 MΩ min./DC 100V
Marking	Laser Marking
Unit Weight	5.7mg+/-0.5mg

# Mechanical Dimensions (mm): Base



## Recommended Land Pattern: (unit: mm)

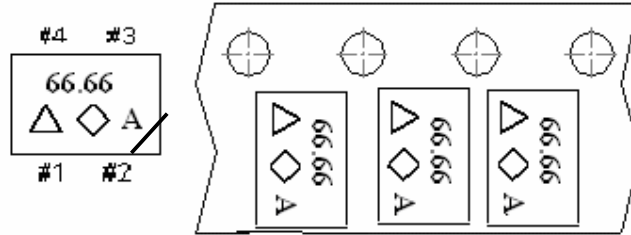


Recommended Land Pattern

# Marking:

Line 1: Frequency (66.66)

Line 2: Date Code ( $\Delta$ ) + Year Code( $\diamond$ )+ Product Code(A)



## $\Delta$ : 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

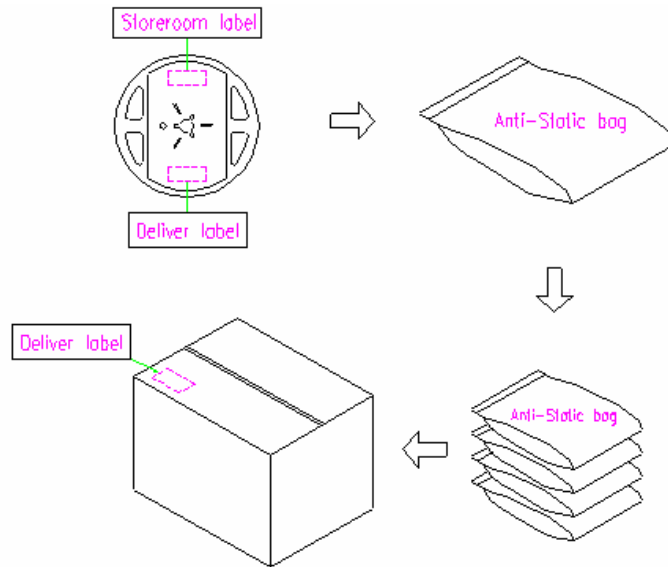
## $\diamond$ :Year Code Table :

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Code	A	B	C	D	E	F	G	H	I	J
Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Code	K	L	M	N	O	P	Q	R	S	T
Year	2037	2038	2039	2040	2041	2042				
Code	U	V	W	X	Y	Z				

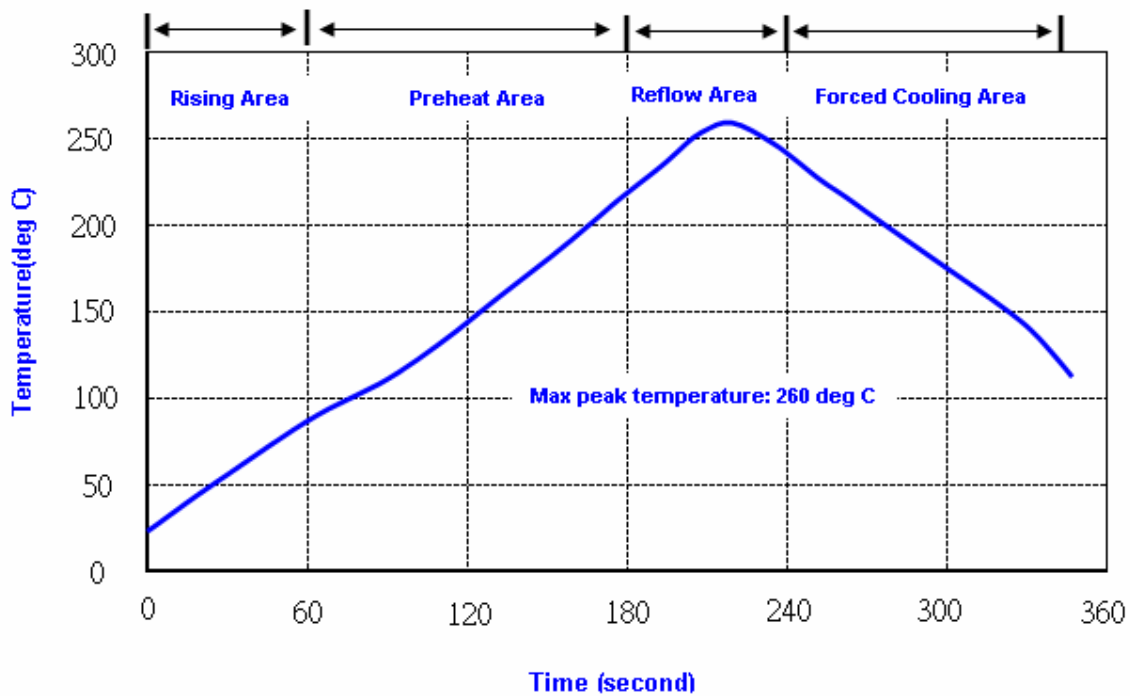


## Packing Quantity/Packing:

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
<b>Mechanical characteristics</b>		
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
<b>Environmental characteristics</b>		
Thermal Shock	Heat cycle conditions -40 °C (30min) ↔ 85 °C (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