



Fronter Electronics Co., Ltd.

福浪电子有限公司

Specification for X'tal SMD6.0*3.5mm

Seam Sealing

Customer: _____ **Product:** _____

Customer P/N: _____ **Our P/N:** _____

Application: _____ **Type&Freq.:** _____

P/O No.: _____ **Date:** _____

Authorized By _____ **Approved By** _____

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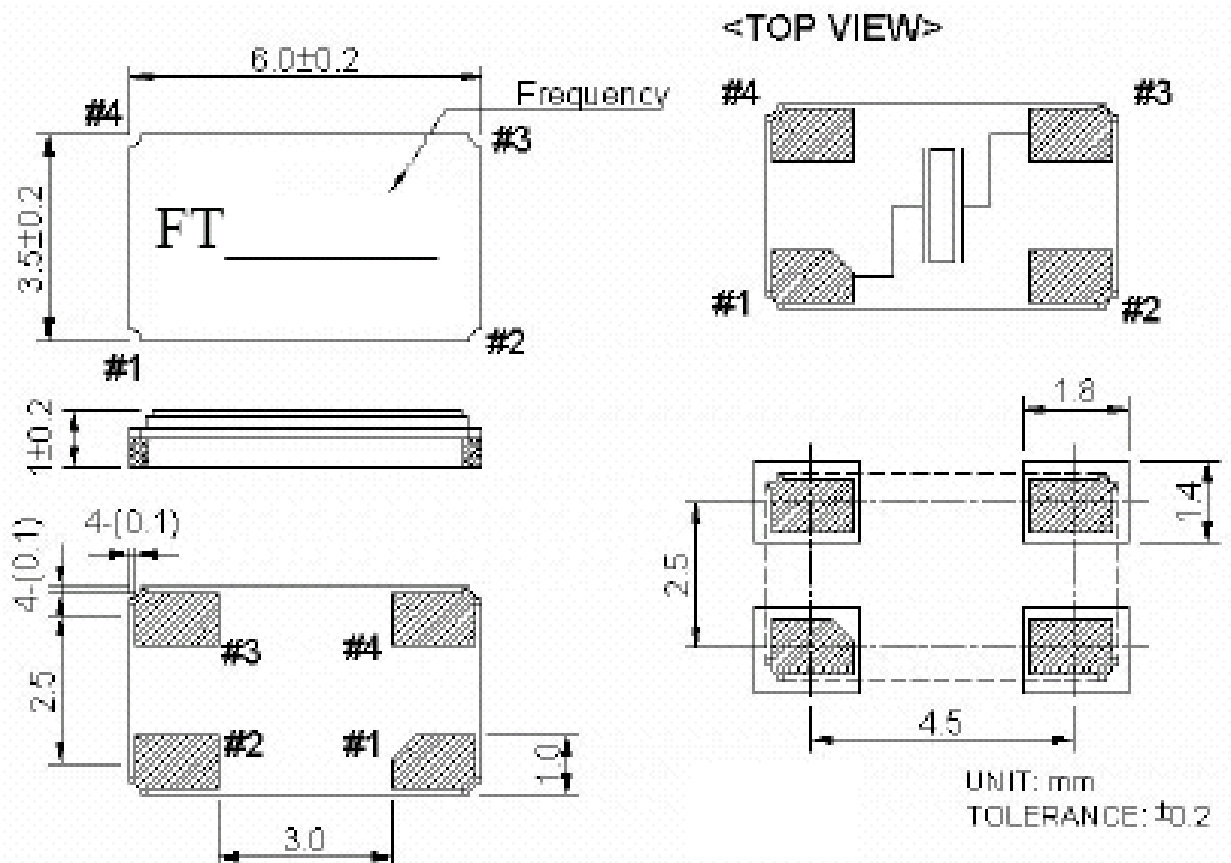
Web: <http://www.chinafronter.com>

QUARTZ CRYSTAL UNIT SPECIFICATION

1. Electrical Characteristics:

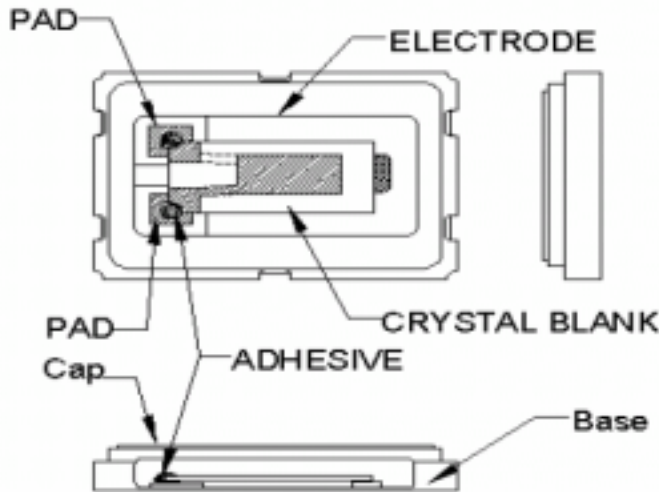
1. Frequency:	26.000MHz
2. Holder type:	SMD6.0*3.5mm
3. Frequency tolerance:	±10ppm at 25
4. Equivalent resistance:	40 Max./ SERIES
5. Storage temperature range:	-40 ~+85
6. Operating temperature range:	-20 ~+70
7. Temperature drift:	±10ppm at -20 ~+70
8. Loading capacitance:	16pF
9. Drive level:	100uW
10. Shunt capacitance:	7pF Max
11. Insulation resistance:	500M ohms at DC100V
12. Mode of oscillation:	Fundamental
13. Circuit:	Measured in HP/E5100A S&A 250B
14. Shocking:	Dropped from 50cm height 3 times on firm wood
Variation:	Frequency less than 5ppm
	Resistance less than ±15% or 2 ohms max
15. Aging:	±3ppm/year Max
16. Holder	Seam Type SMD6.0*3.5mm

2. Dimension and Marking



Marking: Logo(FT)+ Frequency or neutral marking. We can also print as per your request on large quantity.

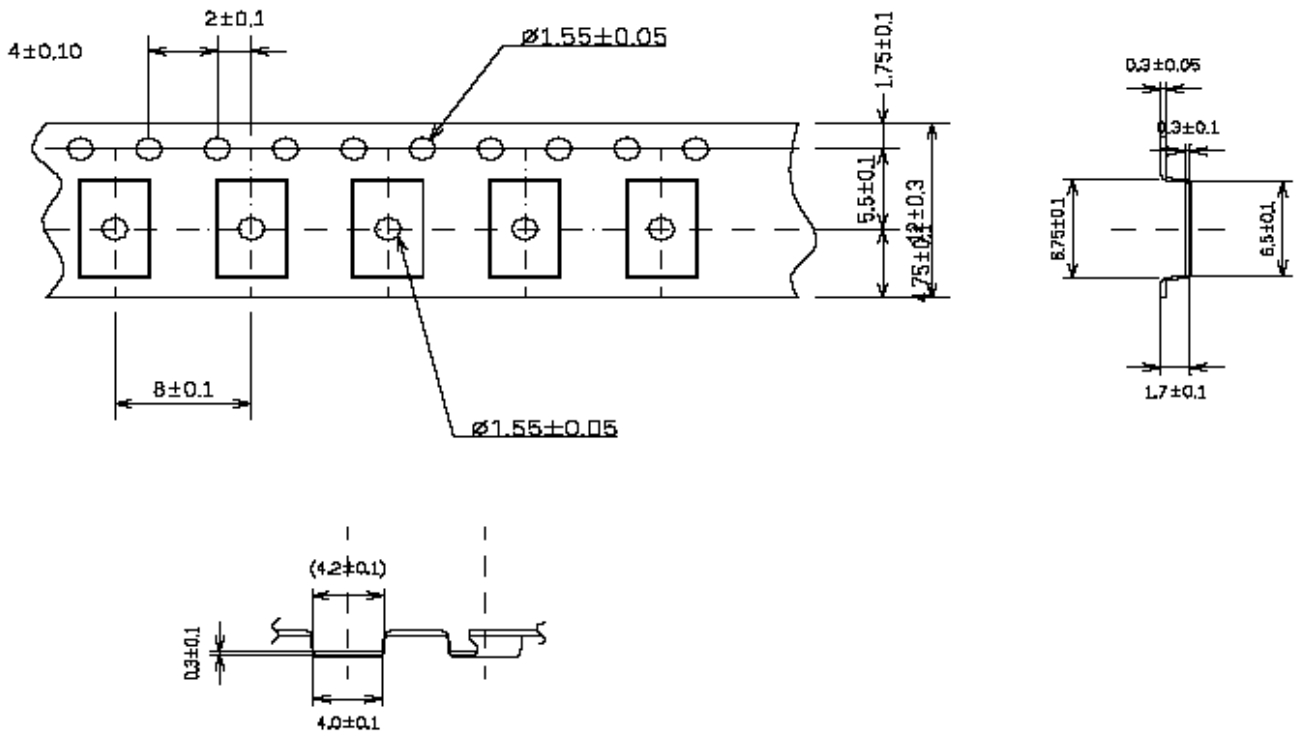
3. Inner Structure



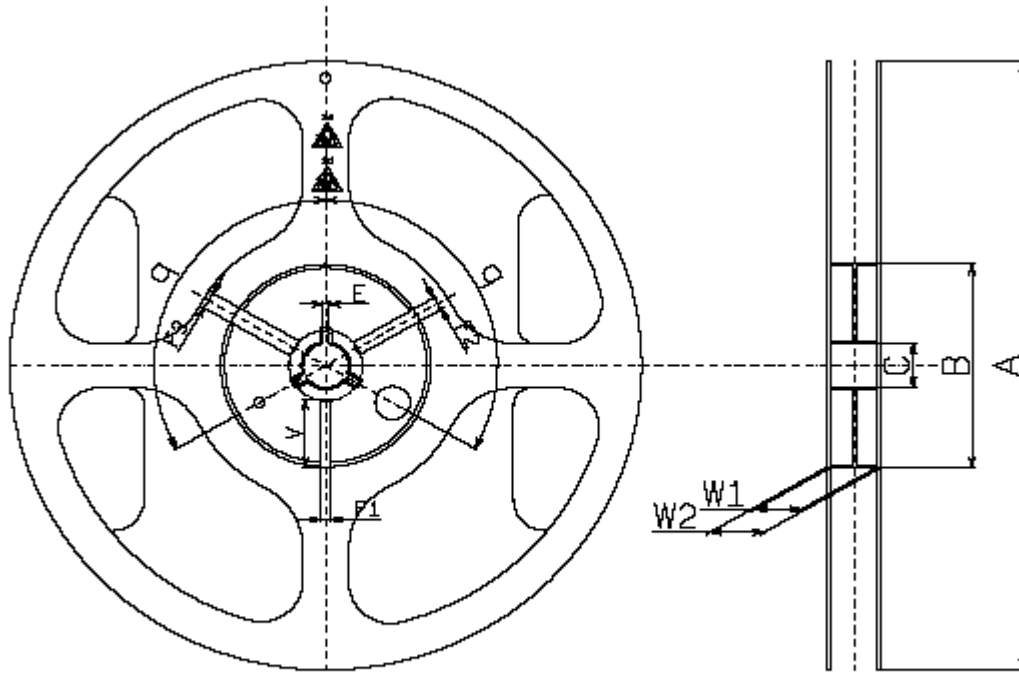
(1) Base: Alumina Ceramic (Al_2O_3) Metallized Pad: W Ni Plating Au Plating
(2) Cap: Alumina Ceramic (Al_2O_3)
(3) Crystal Enclosure Seal: Seal Seam
(4) Crystal Blank Rectangular At-Cut Quartz Crystal Blank
(5) Adhesive Silver Conductive Polyimide Resin
(6) Electrode Ag
(7) PAD Alumina Ceramic (W. Ni. Au)

4. Emboss Carrier Tape & Reel

a). Dimension of Carrier Tape



b). Dimensions of Reel



(Table-2)

(UNIT: mm)

ITEM		MARK	DIMENSIONS • ANGLE	
FLANCE	Diameter	A	$\phi 180+0/-1.5$	
	Inner Width	W1	$13.0+0.3/-0$	
	Outer Width	W	$15.4+/-1.0$	
	Out Line diameter	B	$\phi 60+1.0/-0$	
HUB	Hub Slit	Width	F1	$3.0+/-0.2$
			F2	$4.0+/-0.2$
			F3	$5.0+/-0.2$
		Deep	V	$20.0+0.4/-0$
		Position	θ	120°
	Spindle diameter		C	$\phi 13+/-0.2$
	Key Ditch	Width	E	$2+/-0.5$
		Deep	D	$\phi 21+/-0.8$
Position		θ	120°	

c). Storage condition

Temperature: +40 Max.

Relative Humidity: 80% Max.

d). Standard packing quantity

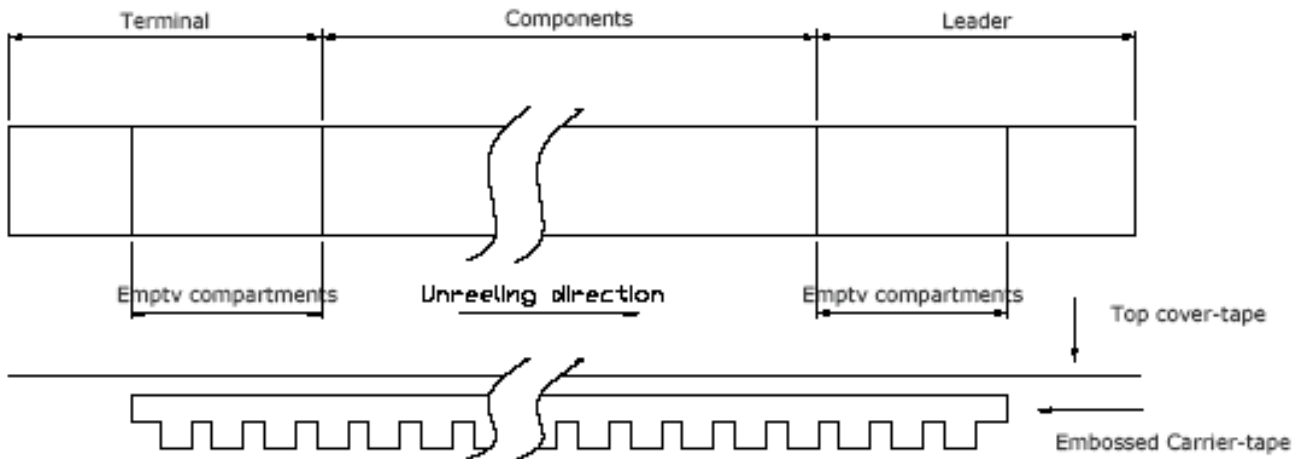
1000pcs/Reel

e). Material of the tape

Tape	Material
Carrier tape	A-PET
Top tape	Polyester

g). Taping dimension

Leader	Cover-tape	The length of cover-tape in the leader is more than 400mm including empty embossed area
	Carrier-tape	After all products were packaged, must remain more than twenty pieces or 400mm empty area, which should be sealed by cover-tape
Terminal	Cover-tape	The tip of cover-tape should be fixed temporary by paper tape and roll around the core of reel one round.
	Carrier-tape	The empty embossed area which are sealed by top cover-tape must remain more than 40mm.



h). Joint of tape

The carrier-tape and top cover-tape should not be jointed.

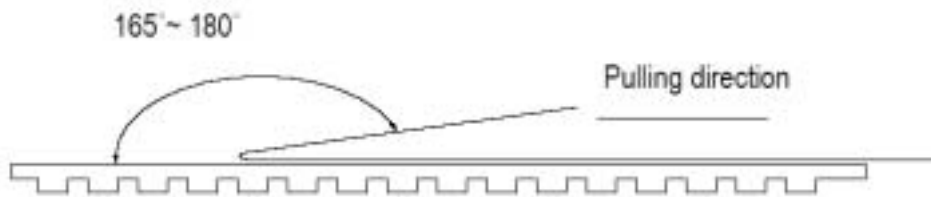
i). Release strength of cover tape

It has to be between 0.1N to 0.7N under following condition.

Pulling direction 165 degr. to 180 degr.

Speed 300mm/min

Otherwise unless specified.



Other Standards should be based on JIS C 0806-1990

5. Mechanical Performance:

5.1. Natural Drop

Drop 3 times from the height of 50cm onto min. 30mm thickness hard wooden board

The component shall satisfy requirement of the electrical characteristics.

5.2. Vibration

Frequency 10~15Hz, Sine Wave full amplitude of 1.5mm to X.Y and Z 3 axes, Duration of the 2 hours to each axis.

The component shall satisfy requirements of the electrical characteristics.

5.3. Sealing Tightness

Leak Rate 1.0×10^{-7} Pa-m³/Sec. Max measured by Helium leak detector.

5.4. Solderability

After applying ROSIN Flux, dipping in solder bath at 230 ± 5 for 5 sec.

Over 90% of terminal shall be covered by solder.

6. Environment Performance:

6.1. Humidity

Temperature 60 ± 2 , RH 90~95%, Duration of 240 hours

Back to room temperature first, then in 1~2 hours, the component shall be checked.

The component shall satisfy requirement of the electrical characteristics.

No physical damage.

6.2. Storage in Low Temperature

-30 ± 2 , Duration of 240 hours.

Back to room temperature first, then in 1~2 hours, the component shall be checked.

The component shall satisfy requirement of the electrical characteristics.

No physical damage.

6.3. Storage in High Temperature

+85 ± 2 , Duration of 240 hours.

Back to room temperature first, then in 1~2 hours, the component shall be checked.

The component shall satisfy requirement of the electrical characteristics.

No physical damage.

6.4. Temperature cycles

-30 ± 2 (30min)~+85 ± 2 (30min) 20 cycles

Back to room temperature first, then in 1~2 hours, the component shall be checked.

The component shall satisfy requirement of the electrical characteristics.

No physical damage.

6.5. VPS

FC-70(the boiling point: +215) Vapor for 30 sec.

Back to room temperature first, then in 1~2 hours, the component shall be checked.

The component shall satisfy requirement of the electrical characteristics.

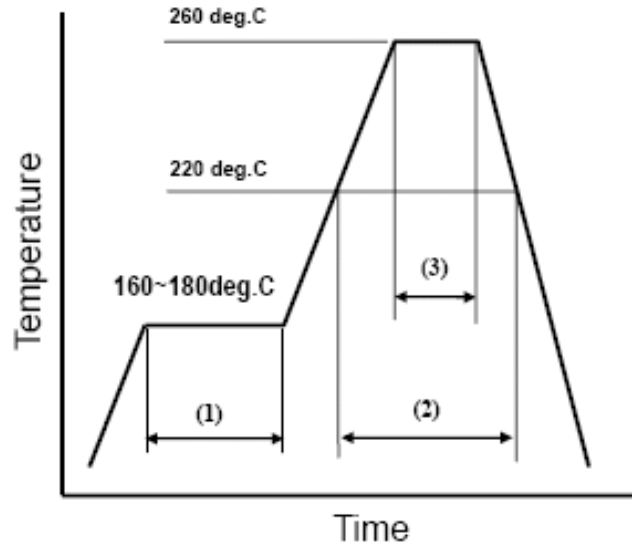
No physical damage.

7. Supplement

7.1. Solering

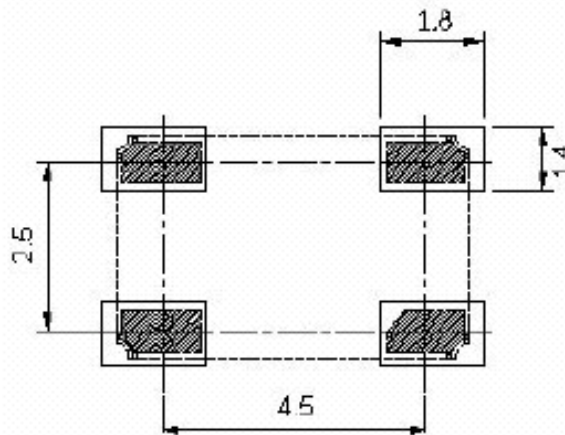
7.2. Please stay with our proposed reflow condition and do then soldering 2 times max.

Available for Lead Free Soldering



(1)	Preheat	160~180 deg.C	120sec.
(2)	Primary heat	220 deg.C	60sec.
(3)	Peak	260 deg.C	10sec. Max.

7.3. Land pattern layout(Example)



7.4. Solder iron(Example)

Bit temp.: 350 max, Times: 3 sec. Max, Each terminal solder a 1 time max.

7.5. Mounting

This component is designed for automatic insertion.

However, you are requested to do the trial with your insertion machine in order to be sure of proper operation and no damage of component.

Please pay attention to board warp which may damage the component and cause Soldering process.

7.6. Cleaning

Cleaning liquid which corrodes Nickel should not be used

It may cause the problem on the surface, color, marking etc.
 Ultr-sonic cleaning is possible, however, you are requested to check on your board.
 Because we only check as single unit.

7.7. Storage

Please keep away from high temperature and high humidity, which may cause put solderbility. No Direct sunlight, no dew as well.

8. Flow Chart.

