



RoHS

STANDARD SPECIFICATION

产品规格书

Customer: _____

Customer Part NO. : _____

Type & Freq: SXT-2520 26MHZ 7PF ±10PPM

TKD Part NO. : SXT25Y026000B71T01

Customer Approval :

(PLEASE RETURN A COPY WITH APPROVAL)

HUBEI TKD ELECTRONICS TECHNOLOGY CO.,LTD.

湖北泰晶电子科技股份有限公司

SUIZHOU TAIWARD ELECTRONIC TECHNOLOGY CO.,LTD

随州泰华电子科技有限公司

APPROVED	CHECK	DESIGNER
J. T Wang	Y Yang	Y Yang

REVISION

Rev	Date	NO.	Description of Revision History
00	2017-10-24		New Publication
01	2018-04-29	1-10	TC 原SPEC: $\pm 12\text{PPM}$ $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$

※ 1. QUARTZ CRYSTAL UNIT SPECIFICATION

1. Frequency:	26.000000MHz
2. Holder type :	SXT-2520
3. Oscillation Mode:	Fundamental
4. Cutting Mode	AT cut
5. Measurement Instrument	S&A 250B (Measured FL)
6. Frequency Tolerance:	± 10 ppm at $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$; @Offset +10ppm
7. Equivalent Series Resistance:	30 Ω Max.
8. Storage Temperature Range:	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
9. Operating Temperature	$-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
10. Frequency Stability: Refer to Operating Temperature	± 10 PPM $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
11. Drive Level:	100uW/Max
12. Load Capacitance (CL) :	7.0pF
13. Shunt Capacitance:	3.0pF MAX
14. Insulation resistance :	500M Ω min /DC 100V
15. Aging:	± 1.0 ppm/1Year; ± 1.5 ppm@2Year ± 2.5 ppm/5Year; ± 5.0 ppm@10Year
16. Frequency drift after reflow	± 2 ppm ; After two reflows
17. PACKING:	3000PCS / Reel ± 0.5 ppm
18. Nonlinearity:	Freq.perturbation over operation temp/step:2 $^{\circ}\text{C}$. (Temp. curve fit 3rd order)
19. Pullability:	25.2~30.8ppm/pf (TYP. 28ppm/pf)
20. SPUR:	500 Ω Min. (f_0 : ± 1 MHz) DLD2: 2.5 Ω Max. /DLDH2: 1.5 Ω Max FDLD: 2ppm Max. /FDLDH: 0.7ppm Max.
21. NOTE:	DLD SWEEP: 0.01~100~0.01uW

※ 2. HYSTERESIS SPECIFICATIONS

Item	Min	Nom	Max	Units	Notes
Full cycle Temperature hysteresis	-0.5		+0.5	ppm	Difference in freq. measurement at any temperature when undergoing a thermal cycle over the entire operation temperature range from -40°C to 85°C for per 2 degree test.
Small cycle Temperature hysteresis	-0.05		+0.05	ppm	Difference in freq. measurement at any temperature when undergoing a thermal cycle of a temperature range of 5°C for per 1 degree test

※ 3. CURVE FITTING PARAMETERS

S curve (fL) 3rd order curve fitting coefficient requirement over operation temperature under Per 2°C test. [f(T)=C3*(T-T0)^3+C2*(T-T0)^2+C1*(T-T0)+C0; T0=25°C]

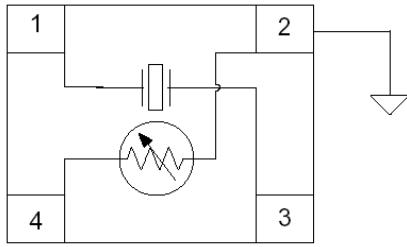
Item	Min	Nom	Max	Units	Notes
C1	-0.40	-0.26	-0.13	ppm/°C	
C2	-12	-8.5	-5	10 ⁻⁴ ppm/°C ²	
C3	8.7	9.9	11	10 ⁻⁵ ppm/°C ³	

※ 4. FREQ. SLOPE SPECIFICATIONS

Freq. slope error between measured S curve (fL) data and 3rd order curve fitting data over operation temperature under per 2°C test.

Item	Min	Nom	Max	Units	Notes
Slope1	-0.05		-0.05	ppm	@-10°C~60°C
Slope2	-0.1		0.1	ppm	@-30°C~85°C

※ 5. THERMISTOR SPECIFICATIONS

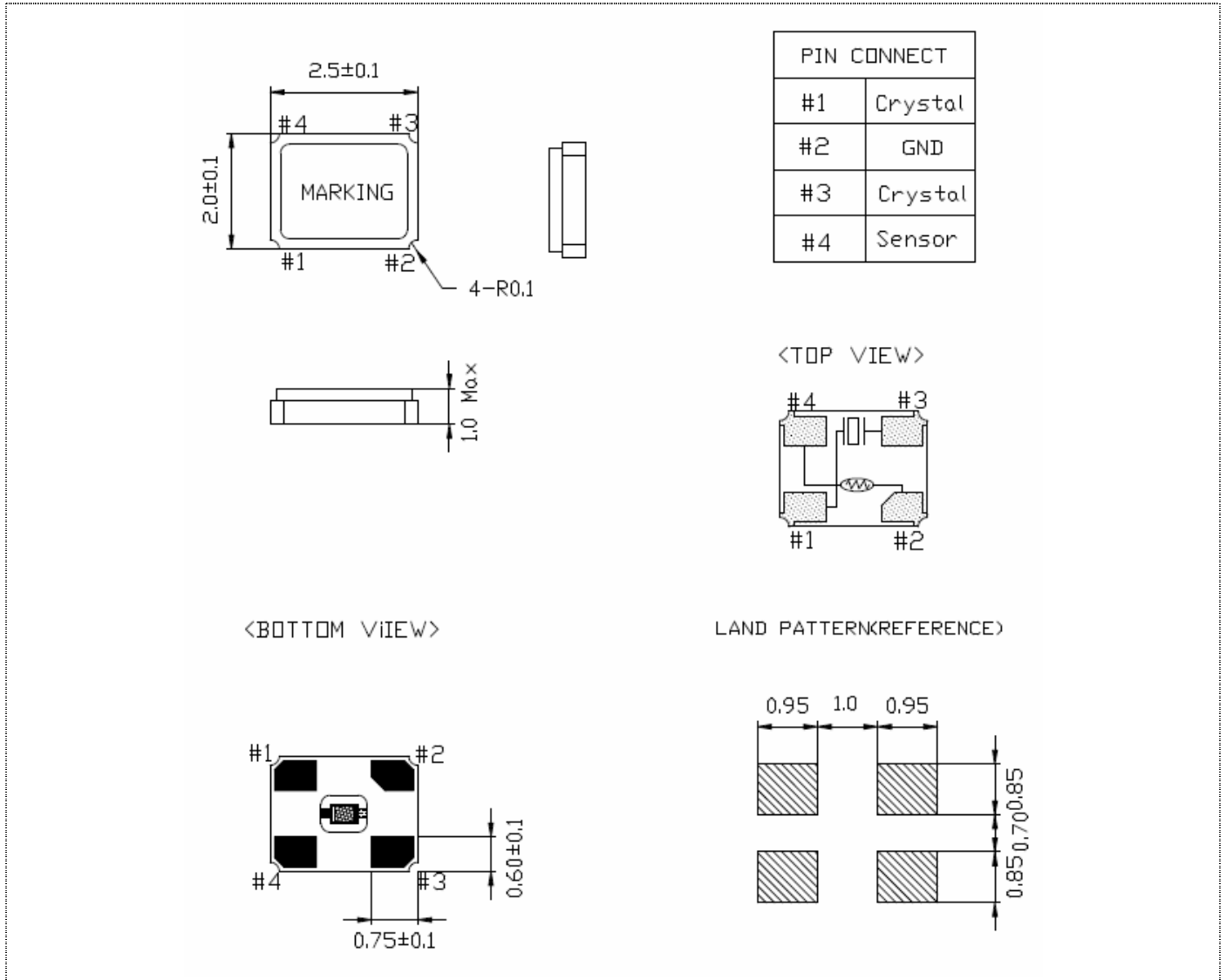


Thermistor size : 0.6mmx0.3mm

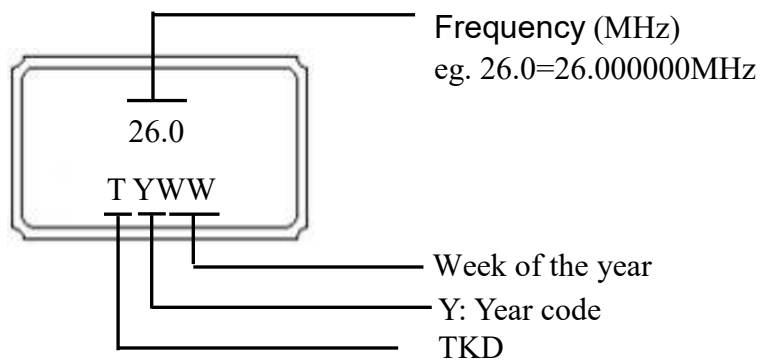
Parameter	Min	TYP.	Max	Unit	Condition
Operating temperature	-30		105	°C	
Storage temperature	-40		105	°C	
Resistance		100		kΩ	25°C
B-constant		4250		K	25-50°C
Tolerance	-1.0		+1.0	%	

※ 6. DIMENSIONS & MARKING

6.1 DIMENSIONS:



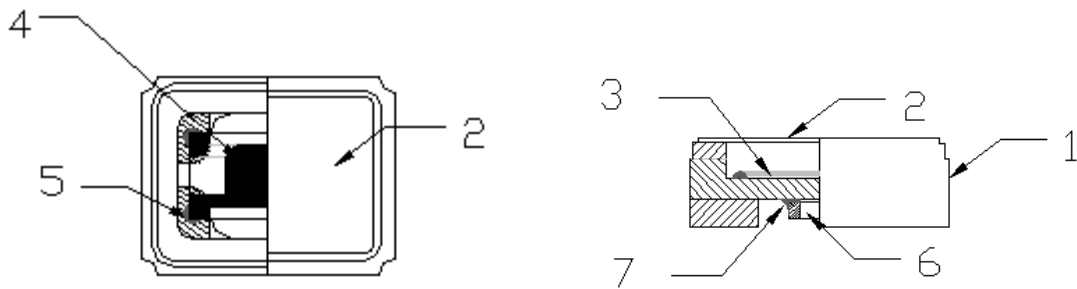
6.2 MARKING:



Year code: 1 2 3 4 5 6 7 8 9 0 (Last 1 digit of the year)

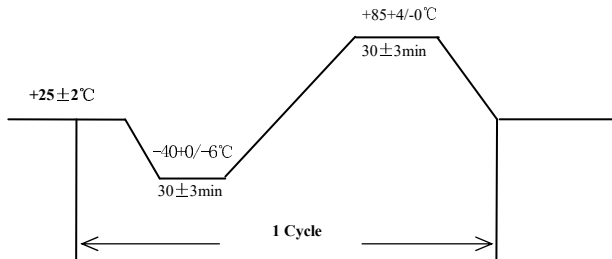
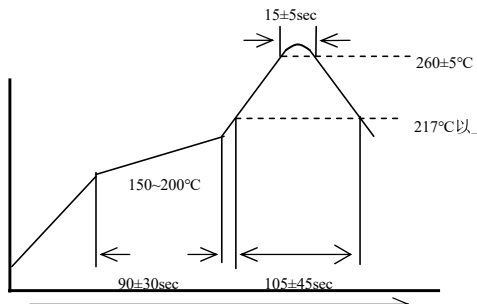
WW : Week of the year

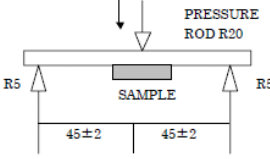
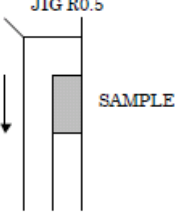
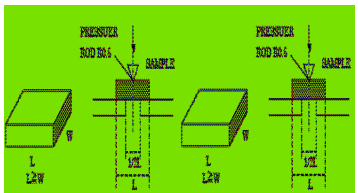
※ 7. INSIDE STRUCTURE



No.	COMPONENTS	MATERIALS
1	Package	Ceramic (Al ₂ O ₃)
2	Lid	KV(Fe/Co/Ni)
3	Crystal Blank	SiO ₂
4	Electrode	Noble Metal (Au)
5	Adhesive	Resin, Ag
6	Thermistor	Ceramic (Al ₂ O ₃)+ Ag+Ni
7	Solder	Sn

※ 8. RELIABILITY SPECIFICATION

REFER		JIS C 6701	
NO.	ITEM	CONDITIONS	BASIS OF VERDICT
1	FREE FALL	FREE DROPPING FROM 100 cm HEIGHT 3 TIMES ON A HARD WOODEN BOARD.	F±2ppm CI±15% or 5Ω
2	VIBRATION	FREQUENCY : 10~55Hz, AMPLITUDE (TOTAL EXCURSION) : 1.5mm±15%, SWEEP TIME : 1MIN, 3 DIRECTION(X, Y, Z) EACH FOR 2 Hrs.	F±2ppm CI±15% or 5Ω
3	TEMPERATURE CYCLE	THE CRYSTAL UNIT SHALL BE SUBJECTED TO 500 SUCCESSIVE CHANGE OF TEMPERATURE CYCLES 	F±2ppm CI±15% or 5Ω
4	RESISTANCE TO SOLDERING HEAT	PEAK: 260°C ± 5°C Time: 10±5 sec 	F±2ppm CI±15% or 5Ω 2 times
5	HIGH TEMP. & HUMIDITY	STORED AT 60±2°C AND HUMIDITY 90~95% FOR 240±12 H.	F±2ppm CI±15% or 5Ω
6	HIGH TEMPERATURE STORAGE	STORED AT 85±2°C FOR 500±12H. (If Customer's temperature request is higher than the standard, Temperature test must be done for customer requirements.)	F±5ppm CI±15% or 5Ω
7	LOW TEMPERATURE STORAGE	STORED AT -40±2°C FOR 500±12H. (If Customer's temperature request is lower than the standard, Temperature test must be done for customer requirements.)	F±5ppm CI±15% or 5Ω

8	FINE LEAK	HELIUM BOMBING 5.0~5.5 Kgf / cm ² ,FOR 2 HOURS.	≤1×10 ⁻⁹ Pa.m ³ /s
9	SOLDERABILITY	THE LEAD IS IMMERSSED IN A 260±5°C SOLDER BATH WITHIN 2±0.6 SECONDS.	more than 95% of lead shall be covered by new solder
10	TERMINAL STRENGTH	SHALL BE PRESSURIZED AT A SPEED OF APPROX.0.5mm/sec IN THE DIRECTION INDICATED BY THE ARROW UNTIL THE BENDING WIDTH REACHES 3mm AND HELD FOR 5 SECONDS. 	No peeling-off at a soldered part
11	STICKING TENDENCY	A R0.5 JIG SHALL BE USED TO APPLY A 10N DEAD LOAD IN THE DIRECTION INDICATED BY THE ARROW TO THE ELEMENT AND RETAIN IT FOR 10 SECONDS. 	No peeling-off at a soldered part
12	ELEMENT ASSEMBLY STRENGTH	A R0.5 PRESSURIZED BAR SHALL BE USED TO APPLY A 10N LOAD IN THE CENTER OF ELEMENT AND RETAIN IT FOR 10 SECONDS. 	No peeling-off at a soldered part

< Notes >

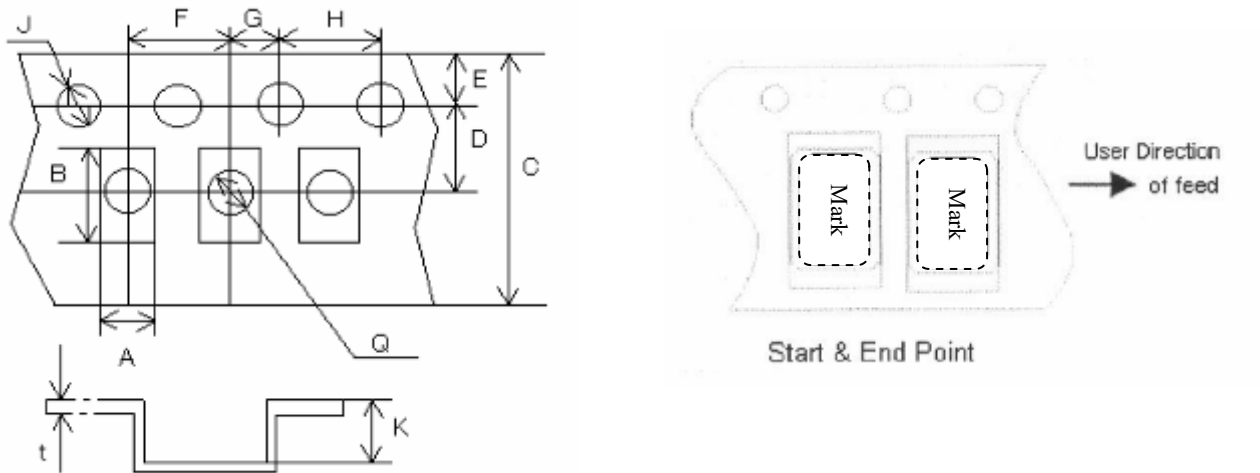
1. Each test done independently
2. Item No.1 to No.7 THEN 25±2°C OVER 2H BEFORE TESTING.
3. General cleaning solutions or ultrasonic cleaning method may be used to clean our products.
However, under certain circumstances, ultrasonic cleaning machine could generate resonance at the oscillation frequency of our products and thus deteriorate the electrical characteristics in devices, and even damage the overall structure

of devices. Therefore, verification test is recommended before cleaning.

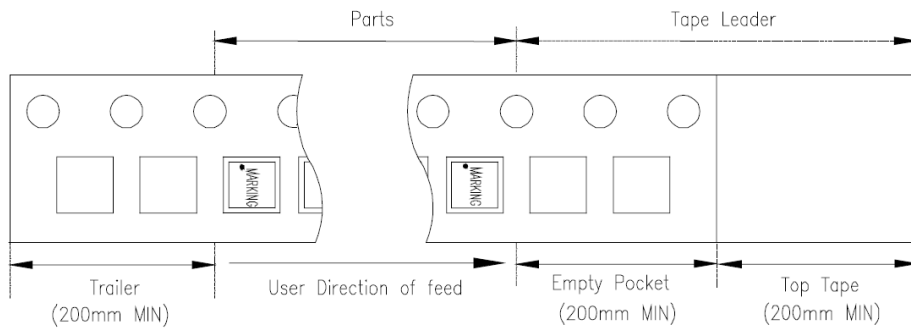
- Avoid mounting and processing by Ultrasonic welding this method has a possibility of an excessive vibration spreading inside the crystal products and becoming the cause of characteristic deterioration and not oscillating.

※ 9. PACKING

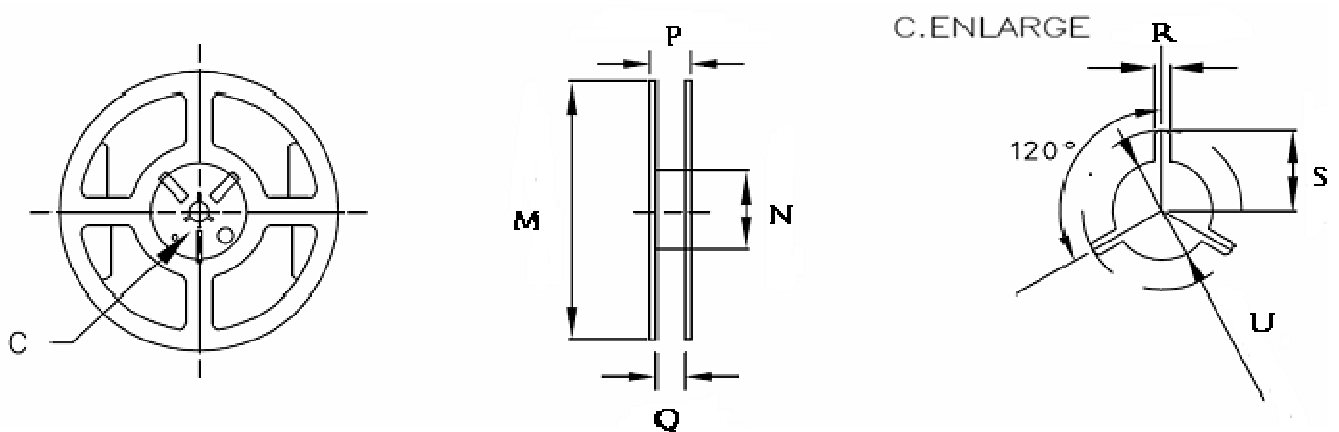
9.1 CARRIER TYPE (unit:mm)



A	B	C	D	E	F	G	H	J	K	t
2.40	2.90	8.0	3.5	1.75	4.0	2.0	4.0	1.55	1.10	0.25



9.2 REEL (unit:mm)



M	N	P	Q	R	S	U
178.0	60.2	11.5	8.0	2.5	11.0	13.0

※ 10. HARMFUL SUBSTANCE CONTENT STATEMENT

随州泰华电子科技有限公司 SXT-2520 产品
有毒有害物质或元素的名称及含量表

材料名称	有毒有害物质或元素						备注
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	
BLANK	ND	ND	ND	ND	ND	ND	
Package	ND	ND	ND	ND	ND	ND	
LID	ND	ND	ND	ND	ND	ND	
Electrode	ND	ND	ND	ND	ND	ND	
Adhesive	ND	ND	ND	ND	ND	ND	
Thermistor	ND	ND	ND	ND	ND	ND	
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拆分部件 n							

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 规定的限量要求以下
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 规定的限量要求。
(供应商应将其原材料按要求进行拆分，并按照此表格进行详细标注, 对不能满足标准要求的零部件进行具体的原因描述)