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APPROVAL SHEET

Customer : _____
Part Number : _____
JYEG P/N : JYT2A1C5G5-7-26.000
Holder : SMD2520
Frequency : 26.000MHZ
Manufacturer : Guoxin Jingyuan Electronics
Date : 2024/11/05

Prepared	Checked	Approved
Huang Mingxing	Yang Tiesheng	Zhang Liqiang

(For Customer Use)

Acceptable	Non-Acceptable

Revision History				
No.	Revised Date	Change Content	Approved	Remark
V1.0	24.11.05	Initial release	Yang Tiesheng	

1.This specification applies to SMD TSX quartz crystal unit with a frequency of 26.000MHz.

2. Electrical characteristics

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Normal Frequency Range	F _n	-	-	26.000	-	MHz
Order of vibration	Fundamental					
Load capacitance	CL	-	-	7	-	pF
Frequency Tolerance	FL	@25℃±3℃	-10	-	10	ppm
Equivalent Series Resistance	ESR	-	-	-	30	Ω
Drive level	DL	-	-	-	100	μW
Frequency Stability Over Operating Temp.Range	TC	@-25℃~+85℃	-15	-	15	ppm
Operating Temperature	-	-	-30	-	85	℃
Storage Temperature	-	-	-40	-	105	℃
Shunt capacitance	C0	-	-	-	3	pF
Insulation resistance	IR	DC 100V	500	-	-	MΩ
DLD	DLD2	0.01uW to 100uW 100uW to 0.01uW	-	-	3.5	Ω
	FDLD		-	-	2.0	ppm
	RLD2		-	-	30	Ω
	DLDH2		-	-	2.0	Ω
	FDLDH		-	-	0.7	ppm
Trim sensitivity	TS	@9PF	16.2	19.0	21.8	ppm/pF
Aging(/1Year)	-	-	-1	-	1	ppm
Aging(/2Year)	-	-	-1.5	-	1.5	ppm
Aging(/5Year)	-	-	-2.5	-	2.5	ppm
Aging(/10Year)	-	-	-5	-	5	ppm
Frequency drift after reflow	-	After two reflows	-2	-	2	ppm
First-order curve fitting parameter	A1	-	-0.35	-	-0.1	ppm/℃
Second-order curve fitting parameter	A2	-	-12	-	-5	10 ⁻⁴ ppm/℃ ²
Third-order curve fitting parameter	A3	-	8.7	-	11	10 ⁻⁵ ppm/℃ ³

Note1: Ultrasonic cleaning

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.

Note2: Ultrasonic welding

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.

Note3: Storage temperature description

Storage Temperature is only for the product itself, the temperature for the packing material is 5℃ ~40℃.

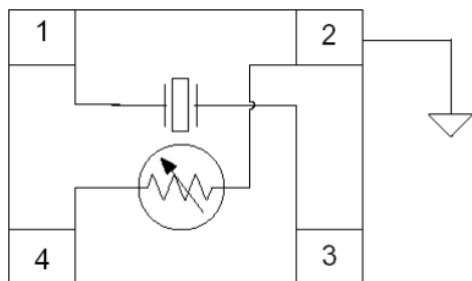
Note4: Some customers will use C1, C2 and C3 to represent the tertiary curve coefficient.

$$F(t)=A3(T-T_0)^3+A2(T-T_0)^2+A1(T-T_0)+A0 \quad T_0=25^{\circ}\text{C}$$

3. FREQ.SLOPE SPECIFICATIONS

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

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

4. THERMISTOR SPECIFICATIONS

Parameter	Min	TYP.	Max	Unit	Condition
Operating temperature	-30		85	℃	
Storage temperature	-40		105	℃	
Resistance		100		KΩ	25℃
B-constant		4250		K	25-50℃
Tolerance	-1.0		+1.0	%	

3. Construction

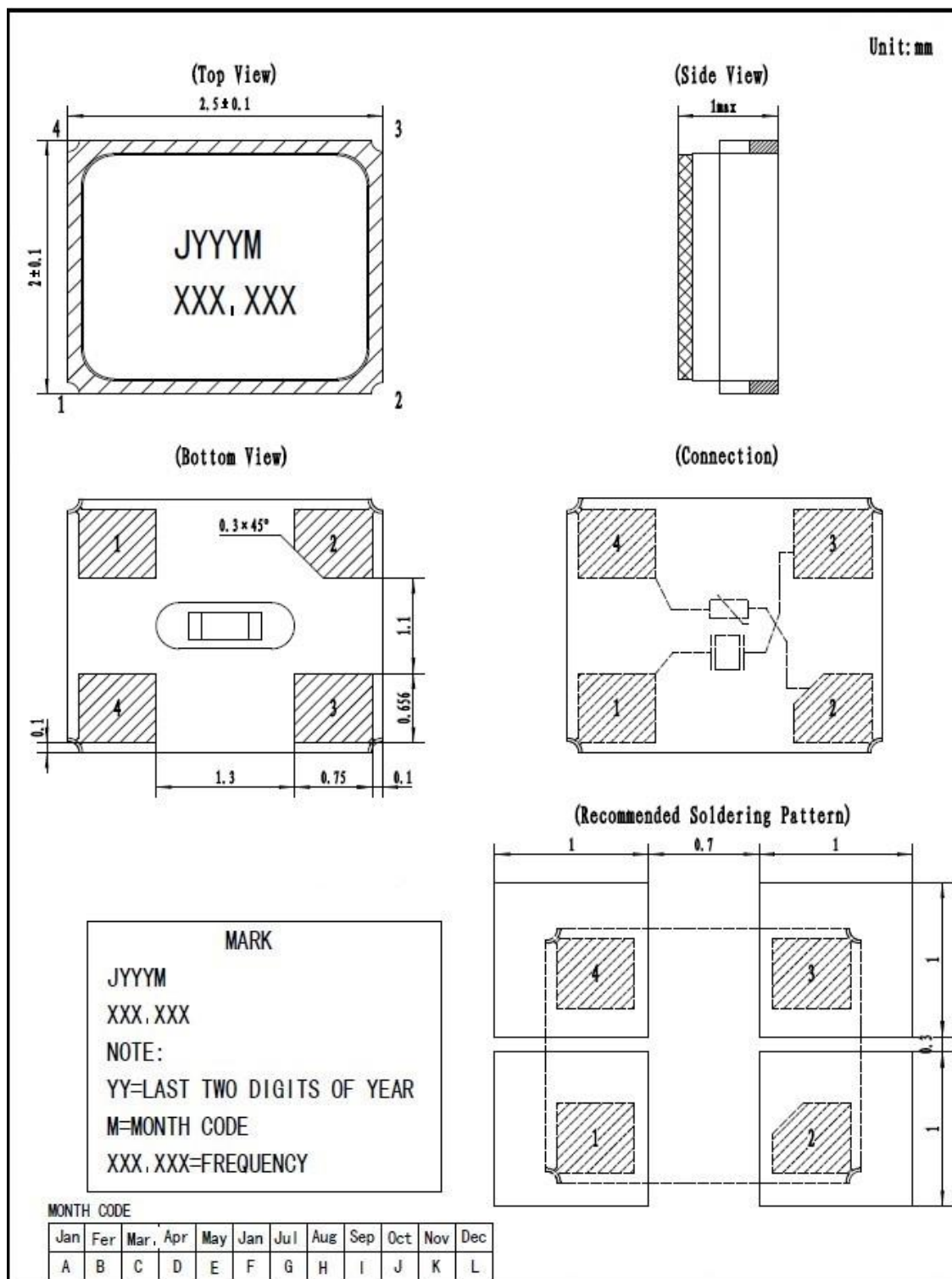
3.1 Crystal enclosure seal:

☒ Seam seal ☐ resistance weld ☐ cold weld

3.2 crystal enclosure medium

☒ nitrogen ☐ vacuum ☐ dry air

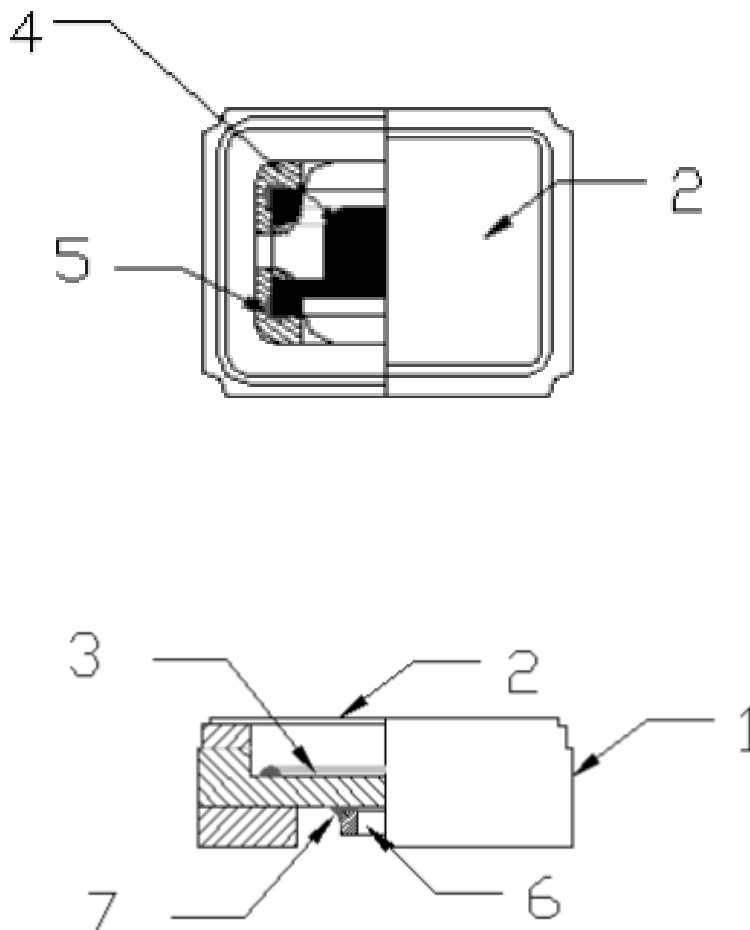
4.Dimension:



5. Marking

☒ Laser Marking ☐ Ink Marking

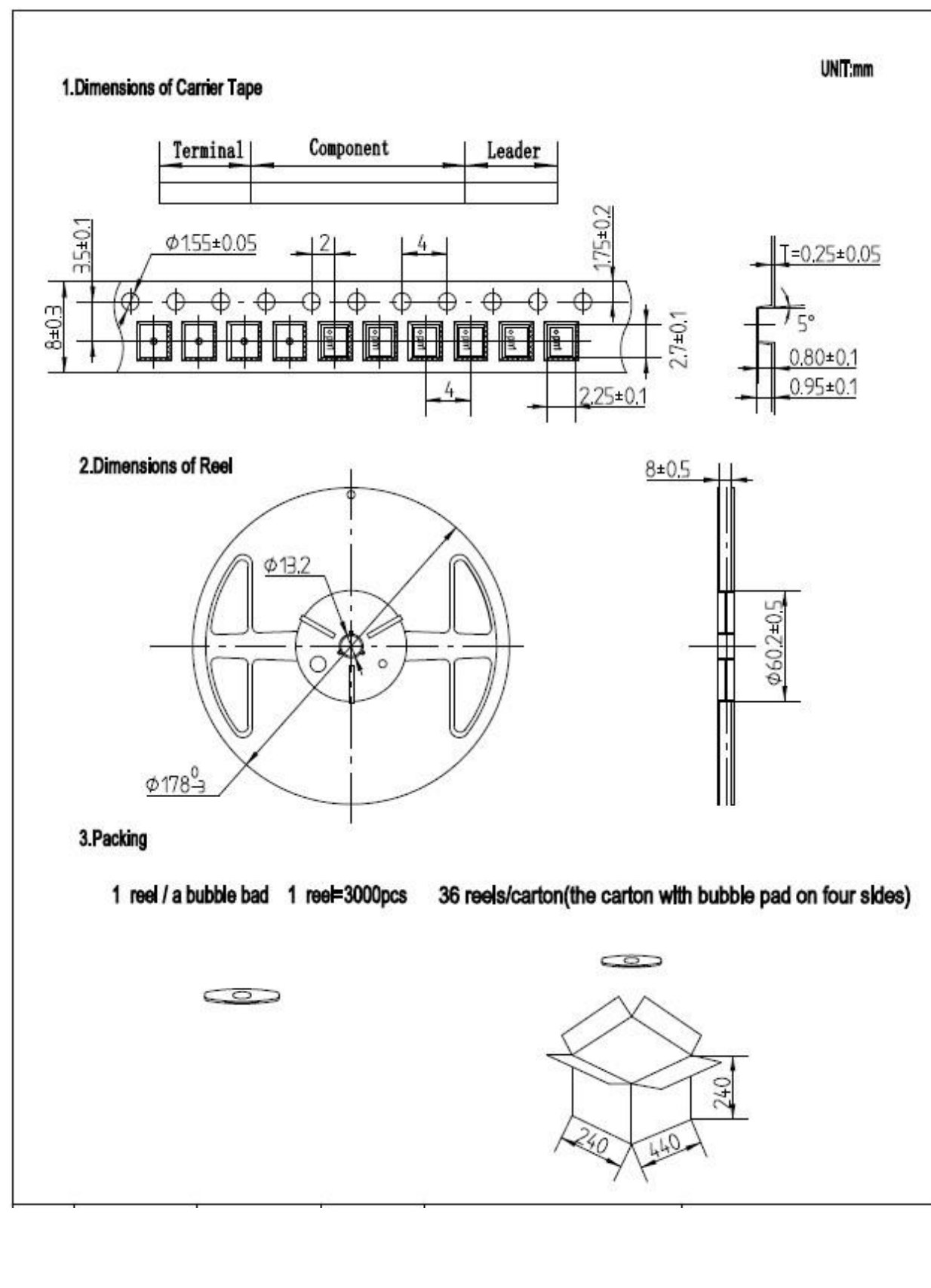
6.Inside Structure



No.	Components	Material
(1)	Base(Package)	Ceramic (Al ₂ O ₃)
(2)	LID	Kovar (Fe-Co-Ni)
(3)	Crystal Blank	SiO ₂
(4)	Electrode	Noble Metal (Au)
(5)	Abhesive	Resin、Ag
(6)	Thermistor	Ceramic (Al ₂ O ₃)+Ag+Ni
(7)	Solder	Sn

7.Taping Dimension and Packing Instruction

7.1



7.2

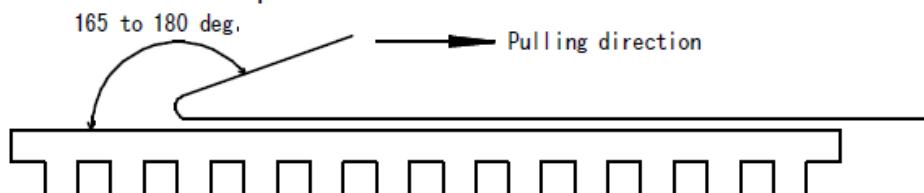
Release strength of cover tape

It has to be between 30g to 90g under following condition.

Pulling direction : 165 deg. to 180 deg.

Speed : 300mm/min.

Otherwise unless specified.



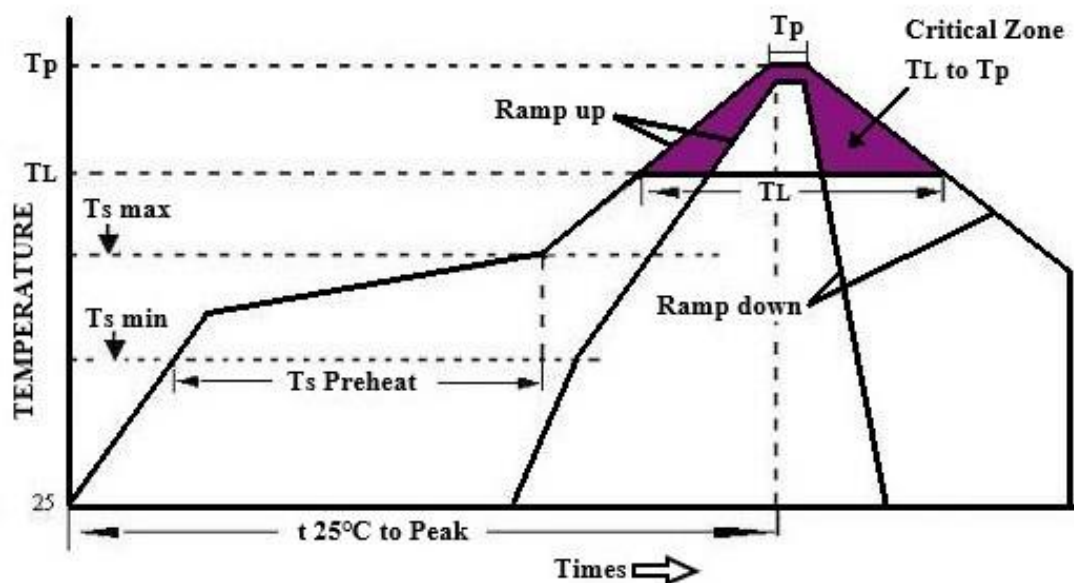
8. Reliability characteristic:

	Item	Condition	Specifications
8.1	Solderability	Solder bath temperature: 260 °C , dwell time: 5 seconds, Solder: 100% tin	A new uniform coating of solder shall cover a minimum of 95% of the surface being immersed.
8.2	Resistance to soldering heat	Solder temperature 260 $\pm$ 3 °C, Immersion time: 10 S Solder bath composition: 100% tin	$\Delta F \leq \pm 5 \text{ ppm}$ $\Delta R \leq \pm 15\% + 3 \Omega$
8.3	Vibration	The entire frequency range: 10 Hz to 55 Hz , Amplitude: 1.5 mm This motion shall be applied for a period of 2 h in each of 3 mutually perpendicular axes (a total of 6 h)	$\Delta F \leq \pm 5 \text{ ppm}$ $\Delta R \leq \pm 15\% + 3 \Omega$
8.4	Drop test	Drop from 75 cm height on 3 cm hard wooden board for 6 times	$\Delta F \leq \pm 5 \text{ ppm}$ $\Delta R \leq \pm 15\% + 3 \Omega$
8.5	Cold Storage	The quartz crystal unit shall be stored at a temperature of -40 $\pm$ 3 °C for 1000 h. then it shall be subjected to standard atmospheric conditions for 1 h after which measurement shall be made.	$\Delta F \leq \pm 5 \text{ ppm}$ $\Delta R \leq \pm 15\% + 3 \Omega$

8.6	High temperature high humidity storage (steady state)	The quartz crystal unit shall be stored at a temperature of 40+/-2 °C with relative humidity of 95% for 1000h, then it shall be subjected to standard atmospheric conditions for 2h after which measurement shall be made.	$\Delta F \leq \pm 5 \text{ppm}$ $\Delta R \leq \pm 15\% + 3\Omega$		
8.7	Thermal shock	The quartz crystal unit shall be subjected to 50 successive Change of temperature cycles. Each as shown in table below ,then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made.	$\Delta F \leq \pm 5 \text{ppm}$ $\Delta R \leq \pm 15\% + 3\Omega$		
				Temperature	Duration
		1.		-40+/-3°C	15minutes
		2.		100+/-2°C	15minutes
		3.		Transition time	Within 10 seconds
8.8	Sealing	Helium leakage detector shall used to measure the leakage rate of gas through any faulty seal. Pressure:500Kpa, duration:120 minutes	Leakage rate $\leq 1 \cdot 10^{-9} \text{ Pa.m}^3/\text{S}$		
8.9	High temperature Life test	The quartz crystal unit shall be stored at a temperature of 85+/-3°C for 720h ,then it shall be subjected to standard atmospheric condition for 1h after which measurement shall be made.	$\Delta F \leq \pm 5 \text{ppm}$ $\Delta R \leq \pm 15\% + 3\Omega$		

9.All products are RoHs compliant

10. Reflow Profile



High Temperature Infrared /Convection

Note: Temperature shown are applied to body of device

$T_{s \max}$ to T_L (Ramp-up Rate)	3°C/second max
Preheat	
Temperature Min ($T_{s \min}$)	150°C
Temperature Typical ($T_{s \text{ Typ}}$)	175°C
Temperature Max. ($T_{s \max}$)	200°C
Time (t_s)	60-180 seconds
Ramp-up Rate (T_L to T_p)	3°C/second Max
Time Maintained Above:	
--Temperature (T_L)	217°C
--Time (T_L)	60-150 seconds
Peak Temperature (T_p)	260°C Max for 10 seconds
Time within 5°C of actual peak (t_p)	20-40 seconds
Ramp-down Rate	6°C/seconds Max
Time 25°C to Peak Temperature (t)	8 minutes Max
Moisture Sensitivity Level	Level 1

High Temperature Manual Soldering

Note: Temperature shown are applied to body of device

260°C Max for 10 seconds Max, 4 times Max