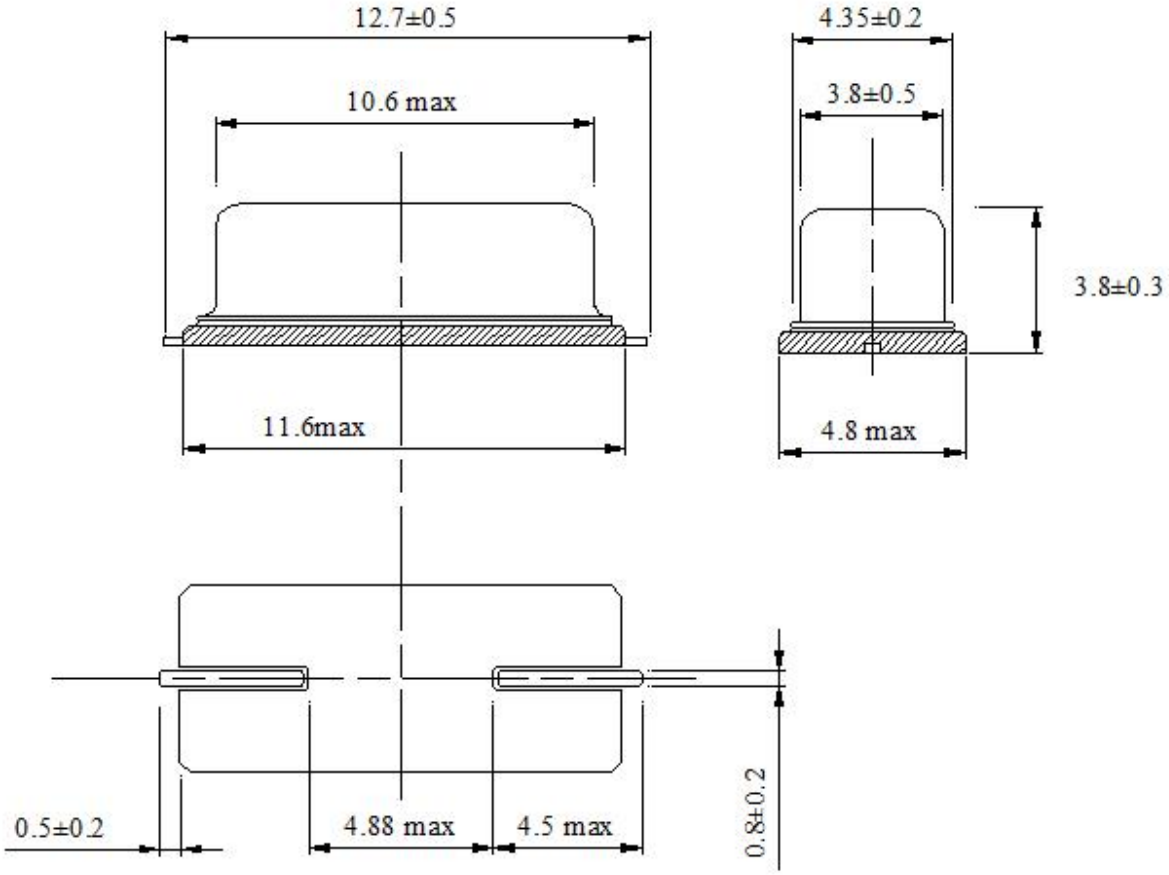
2. MARKING & DIMENSIONS



*Marking should be printed as following:

Logo, Nominal Frequency

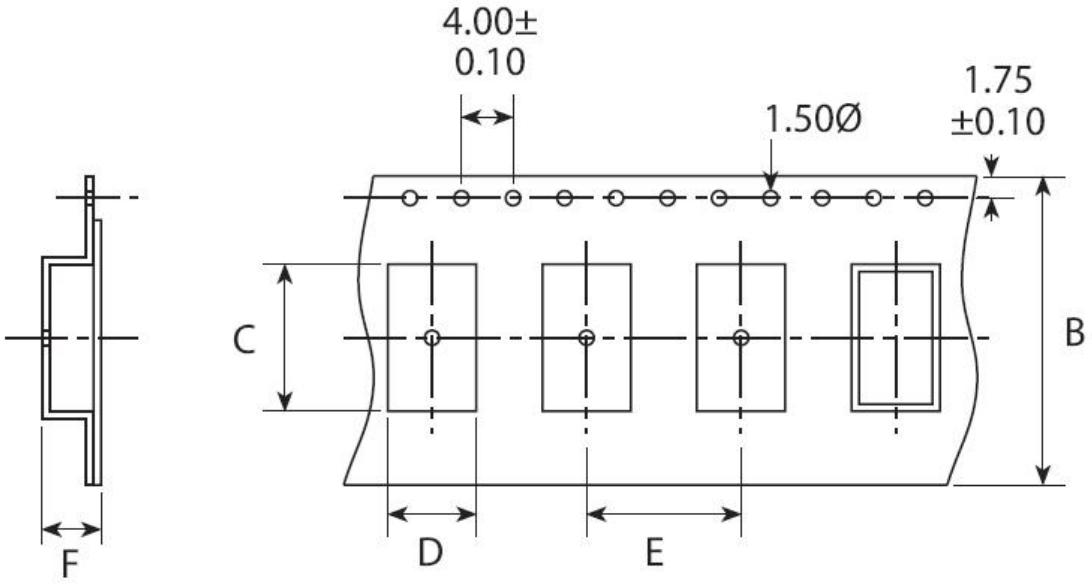
Logo：T

Nominal Frequency：（ex. 8.000 MHz∨8.000）

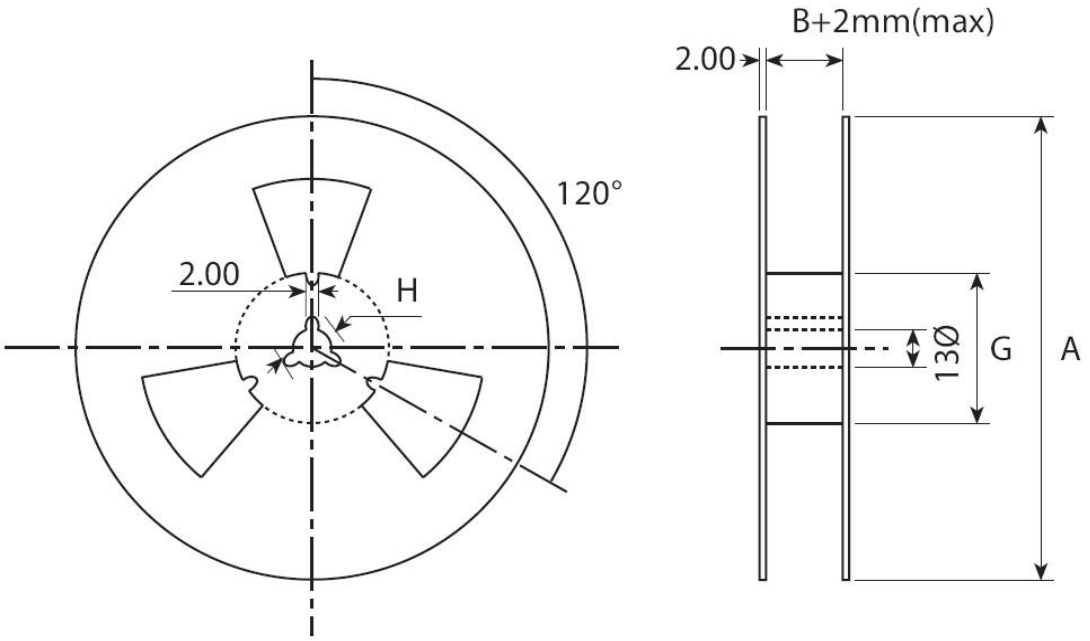
Marking: Laser marking

3.CARRIER TAPE & REEL

a.) Dimensions of Carrier Tape

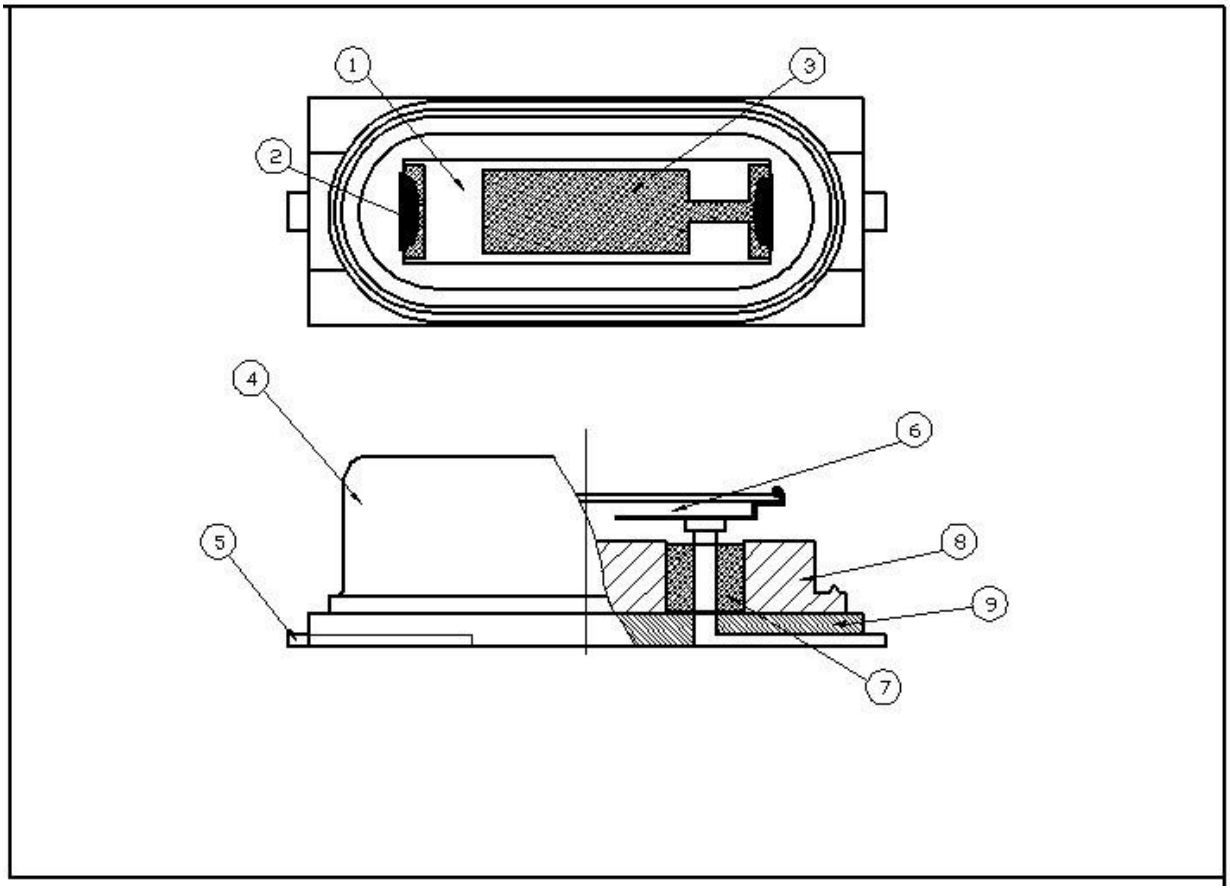


b.) Dimensions of Reel



	A	B	C	D	E	F	G
49SMD	330±2.0	24±0.2	13.9	5.6	12.0	4.8	100
1000 pieces of crystal unit per reel							

4. INSIDE STRUCTURE

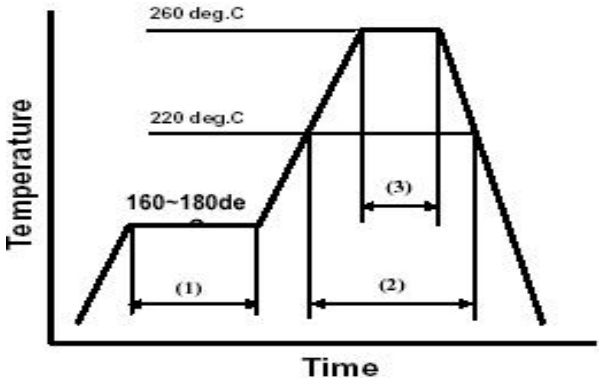


NO.	Product name	MATERIALS	QTY
1	Blank	SIO2	1
2	Silver paste	3301F	2
3	Silver	Ag	2
4	Cove	Au	1
5	Lead	Kovar	2
6	Pin	C7701	2
7	GLASS	GLASS	2
8	Base	SPCC-SD	1
9	Insulation	PPA	1

5.MECHANICAL/ENVIRONMENTAL CHARACTERISTICS

NO.	ITEM	CONDITIONS	SPECIFICATIONS
5.1	Leaking Test	Fully immersed into hot water at 90℃ ±3℃ for 3 minutes.	no air bubble are visible.
		Take measurements with a helium leakage detector，or measure insulation resistance under pressure.	1×10^{-8} Pa.m^3 /s Max or IR≥500MΩ
5.2	Drop Test	Dropping 6 times from the height of 75 cm onto hard wooden board of thickness more than 30mm.	The crystal must meet: Δ|f±|≤5ppm Δ|R|≤15%
5.3	Vibration Test	Vibration Frequency: 10~55Hz Cycle: 1.5 Min. Amplitude: 1.5mm P-P. Direction: X.Y.Z Time: 2 Hours / Each Direction	The crystal must meet: Δ|f±|≤5ppm Δ|R|≤15%
5.4	Solderability Test	The terminal lead wire is to be soaked in a 230℃ ±5℃ tin trough for 5±0.5 seconds.	Tin over the wire≥90% The crystal must meet: Δ|f±|≤5ppm Δ|R|≤15%
5.5	Low Temperature Enduring	The samples crystal is to be tested after being placed in the environment of -40±3℃ for 96 hours, and recovered to room temperature for 2 hours.	The crystal must meet: Δ|f±|≤5ppm Δ|R|≤15%
5.6	High Temperature Enduring	The samples crystal is to be tested after being heated at +85±3℃ for 96 hours, and cooled to room temperature for 2 hours.	The crystal must meet: Δ|f±|≤5ppm Δ|R|≤15%

<table>
<tr><td>5.7</td><td>Humidity</td><td>The temperature is at 40±3℃, and at 93% ±2% RH after 96 hours， and cooled to room temperature for 2 hours.</td><td>The crystal must meet:Δ｜f±≤｜5ppm
Δ｜R｜≤15%</td></tr>
<tr><td>5.8</td><td>Resistance to Solder Heat

1)Reflow solder</td><td>After resonator is soldered for 1 time in following temperature conditions, and then be placed in natural condition for 24-25 hours. Resonator shall be measured.
 

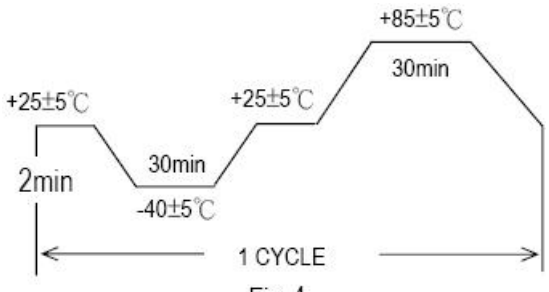
<table>
<tr><td>(1)</td><td>Preheat</td><td>160~180 deg.C</td><td>120sec.</td></tr>
<tr><td>(2)</td><td>Primary heat</td><td>220 deg.C</td><td>60sec.</td></tr>
<tr><td>(3)</td><td>Peak</td><td>260 deg.C</td><td>10sec. Max.</td></tr>
</table></td><td>The crystal must meet:Δ｜f±≤｜5ppm
Δ｜R｜≤15%</td></tr>
<tr><td>5.9</td><td>Thermal shock</td><td>Should be satisfied after supplying the following temperature cycle (10 cycles). (Refer to Fig-4). Temperature shift from low to high, high to low shall be done in 1℃/min.
 

Fig-4</td><td>The crystal must meet:Δ｜f±≤｜5ppm
Δ｜R｜≤15%</td></tr>
</table>