1. QUARTZ CRYSTAL OSCILLATOR SPECIFICATION

1.1 Frequency :	fo	32.000MHz
1.2 Holder Type :		SMD7050
1.3 Frequency Stability :	f_{STAB}	±50ppm Overall Temperature stability is Inclusive of all conditions: Calibration Tolerance at +25 ℃, frequency stability over the operating temperature range, supply voltage change, output load changes, shock, vibration, and 1st year aging at +25 ℃.
1.4 Supply Voltage :	V_{DD}	$5.0V_{DC}$±10%
1.5 Input Current :	I_{DD}	25mA max.
1.6 Operating temperature range :	T_{OPR}	-20℃ To +70℃
1.7 Storage temperature range :	T_{STG}	-55℃ To +125℃
1.8 Symmetry :	SYM	45~55% (at 50% V_{DD})
1.9 Rise& Fall Time :	Tr / Tf	5nS max.
1.10 Output Load :	RL	HCMOS 15pF
1.11 Output Low Level :	V_{OL}	10%V_{DD} max.
1.12 Output High level :	V_{OH}	90%V_{DD} min.
1.13 Output Wave form :		Square
1.14 Pin 1 Connection :		E/D Control
1.15 Start-up Time :	t_{str}	10mS max.
1.16 Standby Current :	T_{STD}	10uA max.
1.17 RMS Phase Jitter :	ϕ_J	1.0pS max. (Integrated from 12KHz to 20MHz)
1.18 Aging :		Less than ±3 ppm/Year
1.19 Insulation Resistance :		500MΩ (DC100±10V)min.
1.20 Output Waveform :		Refer to fig.1
1.21 Test Circuit :		Refer to fig.2

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperature : 25±3 ℃

Relative humidity : 40%~70%

2. Output Waveform

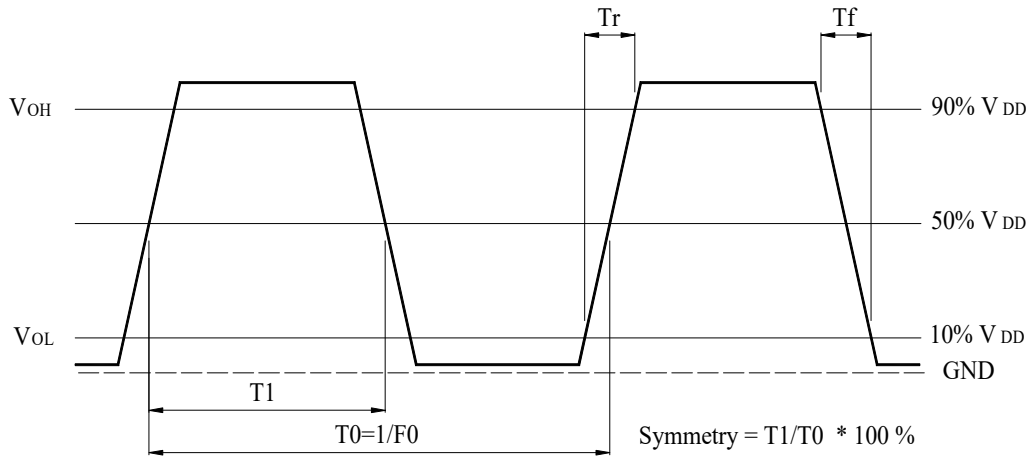
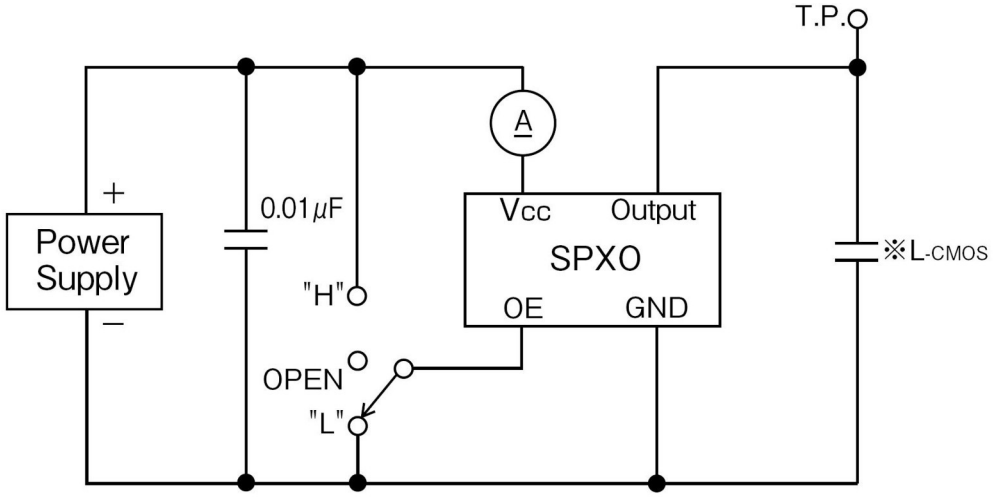


fig.1

3. Test circuit

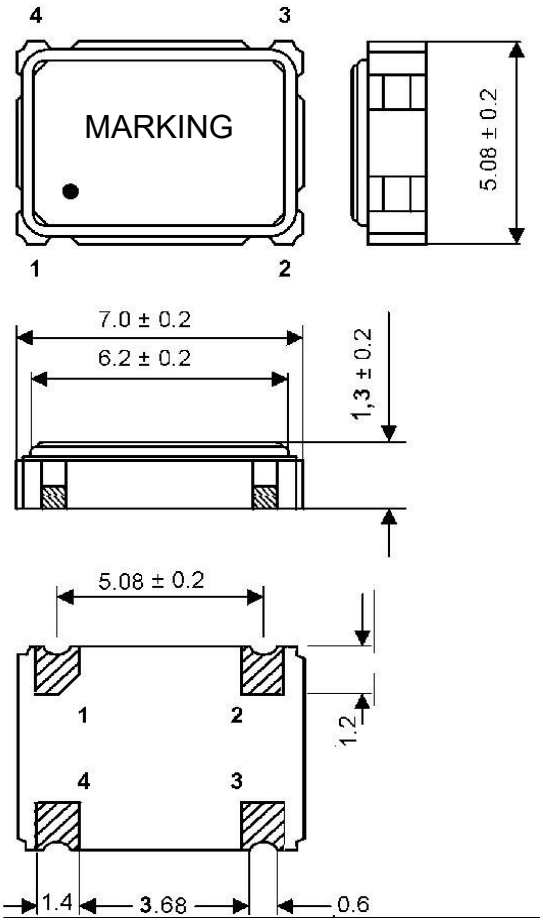


※L-CMOS: Total Fixture and Probe Capacitance

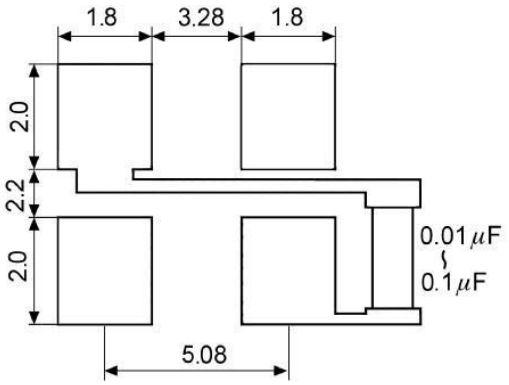
fig.2

4. FXO751S MARKING & DIMENSIONS

(UNIT: mm)



Suggested soldering pad:



Pin	Connection
1	E/D
2	GND
3	Output
4	$+V_{DD}$

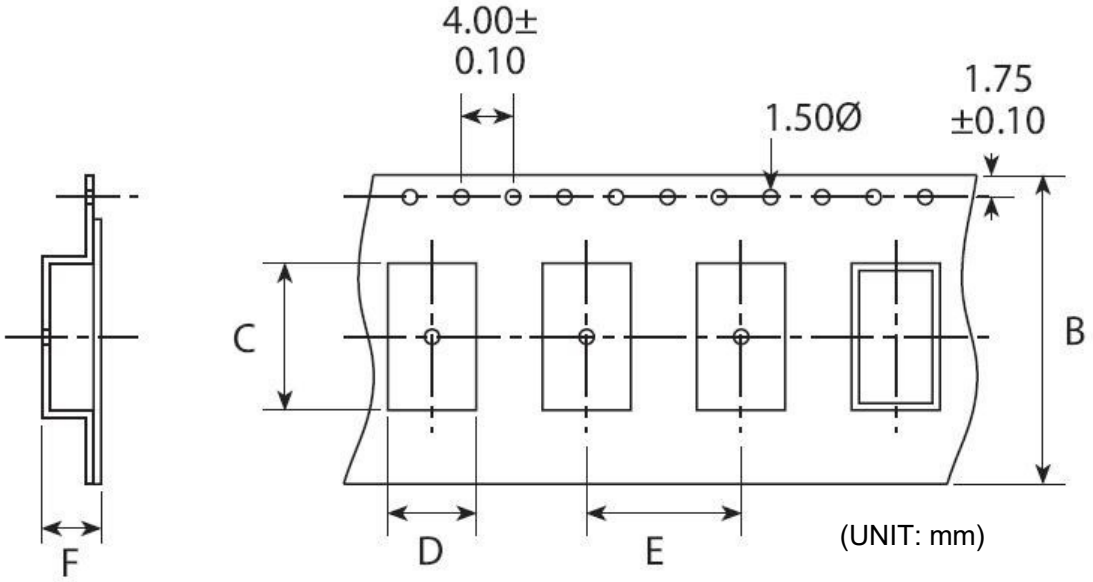
Reference drawing

Base: Alumina Ceramic (Al_2O_3) Metallized Pad: W Ni Plating Au Plating
Cap: Fe-Ni
(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)

E/D：Enable/Disable Function	
Pin 1# (E/D control)	Pin 3# (output)
Open (NC)	Active
High"1" ($V_{IH} \geqslant 70\% V_{DD}$)	Active
Low"0" ($V_{IH} \leqslant 30\% V_{DD}$)	High impedance
Disabled conditions: • internal oscillator active • output disabled, high impedance **Enable condition:** • pull the E/D pin to 'H" if the oscillator should always be enabled	

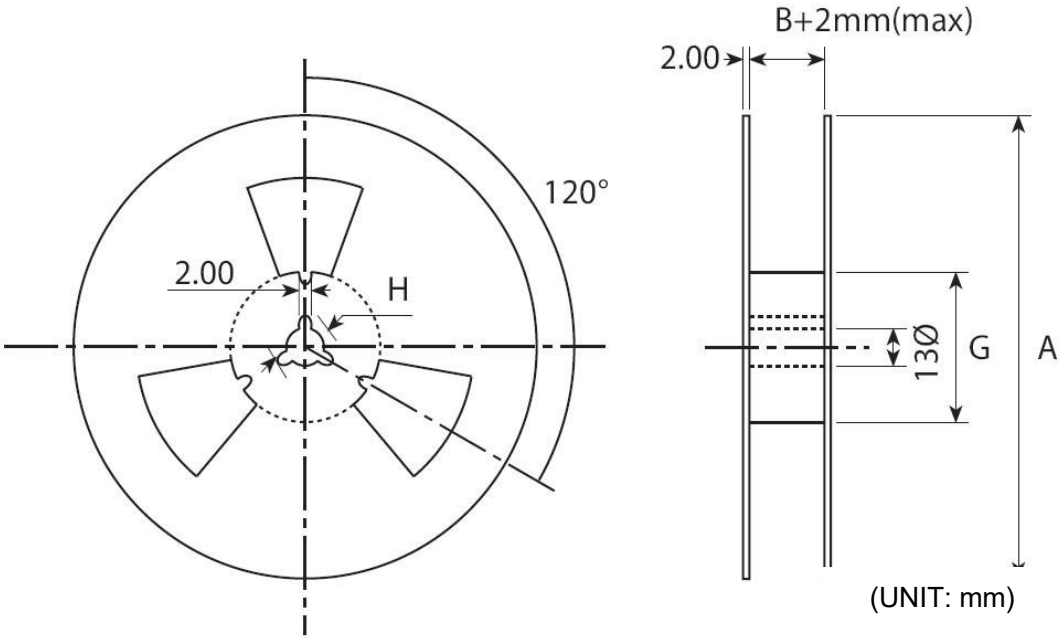
5. FXO751S EMBOSS CARRIER TAPE & REEL

a.) Dimensions of Carrier Tape



	A	B	C	D	E	F	G
OSC-SMD7050	178±2.0	16.0±0.3	7.40±0.10	5.40±0.10	8.0±0.1	2.2±0.2	60.5±1.0

b.) Dimensions of Reel



c.) Storage condition

Temperature: +40deg.C Max.

Relative Humidity: 80% Max.

d.) Standard packing quantity

1,000PCS / REEL

e.) Material of the tape

Material(Carrier tape) : Black conductive PS

Material (Cover tape) : Clear PE

Material (Reel) : PS

f.) Label contents

.The type of product

.Our specification No.

.Your Part No.

.Lot No.

.Nominal Frequency

.Quantity

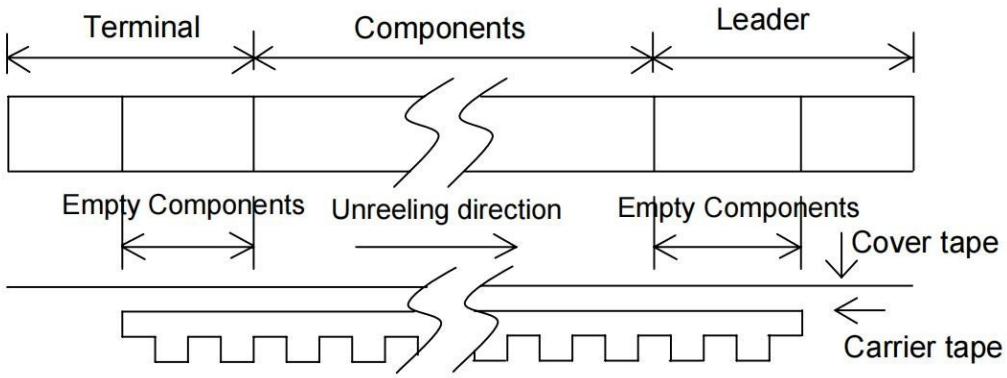
.Our Company Name

Sticks label for every reel.

INSPECTION RECORDS
PO NO.:
CUSTOMER P/N:
FT P/N:
LOT NO.:
PACKAGE:
FREQUENCY:
REMARKS:
QUANTITY:

g.) Taping dimension

Leader	Cover-tape	The length of cover-tape in the leader is more than 400 mm including empty embossed area.
	Carrier-tape	After all products were packaged, must remain more than twenty pieces or 400 mm empty area, which should be sealed by cover-tape.
Terminal	Cover-tape	The tip of cover-tape shall 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 the 40 mm.



h.) Joint of tape

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

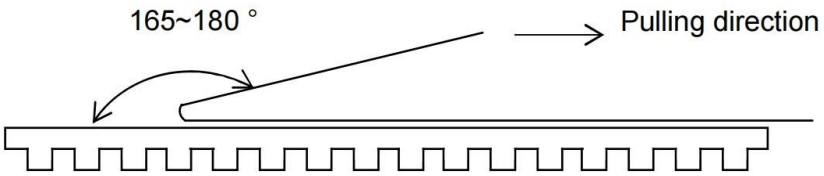
i.) Release strength of cover tape

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

Pulling direction 165° to 180°

Speed 300mm/min.

Otherwise unless specified.



Other standards shall be based on JIS C 0806-1990.

6. Mechanical Endurance: Provided that measurement shall be carried out afterletting it alone in the room temperature for 1 hour.

	Item	Conditions	Specifications
6.1	Drop	Fall freely from 100 cm of height 3 times on a firm wood	MIL-STD-202F-203B
6.2	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times.	MIL-STD-202F
6.3	Vibration	(1)Vibration Frequency: 10~55Hz (2)Cycle: 1 to 2 Min. (3)Full Cycle: 1.5mm P-P. (4)Direction: X.Y.Z (5)Time: 2 Hours / Each Direction	MIL-STD-883E
6.4	Substrate Bending	Mount the specimen on substrate. Apply the following pressure Direction: see Fig –1 Speed: 0.5 mm/sec Hours: 5 ± 1 sec Amount of substrate: 3 mm Max.	Without mechanical damage such as breaks. Without electrode peeling. Electrical characteristics shall be satisfied.
6.5	Adhesion	Mount the specimen on substrate. Apply the following pressure Direction: see Fig –2 Weight: 10N Hours: 10 ± 1 sec	
6.6	Body strength	Mount the specimen on substrate. Apply the following pressure Direction: see Fig –3 Weight: 10N Hours: 10 ± 1 sec	
6.7	Seal	Fine Leak: 4.5kgf/cm^2 2hours 1×10^{-9} Pa.m^3/sec Gross Leak: 4.5kgf/cm^2 2hours 1.5×10^{-5} Pa.m^3/sec	MIL-STD-883E

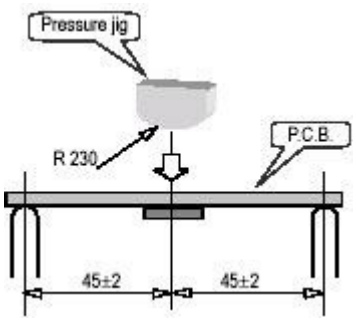


Fig-1

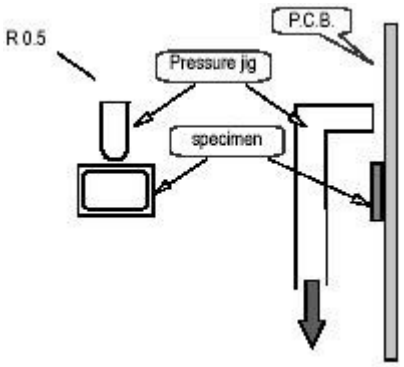


Fig-2

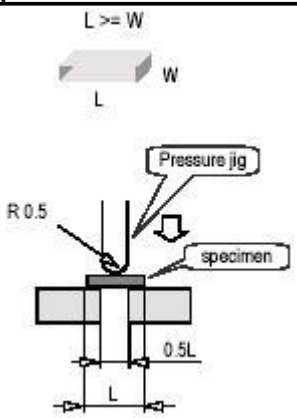
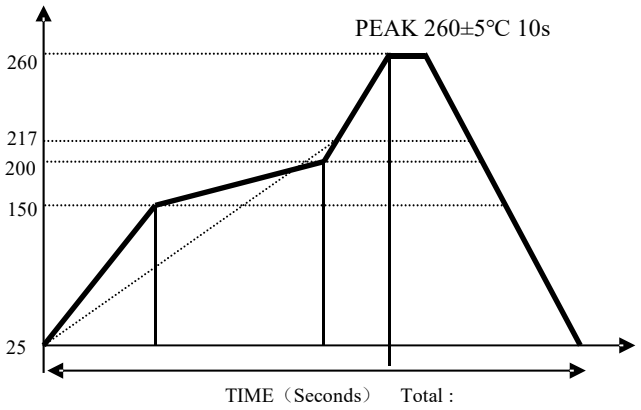


Fig-3

<table>
<tr><td>6.8</td><td>Solder ability</td><td>Pre-heat temperature : +150±10 ℃
Pre-heat time : 60~120s
When the temperature of the specimen is reached at +215±3℃, it shall be left for 30±1sec.
Peak temperature 240±5 ℃
Material: Pb-free (Sn-3.0Ag-0.5Cu)
Flux : Rosin resin methyl alcohol solvent (1:4)
The electrodes should be covered by a new solder at least 90% of immersed area.</td><td>MIL-STD-883E 2003</td></tr>
<tr><td>6.9</td><td>Resistance to Soldering Heat</td><td>Run in Reflow
Reflow soldering shall be allowed
Only two(2) time.

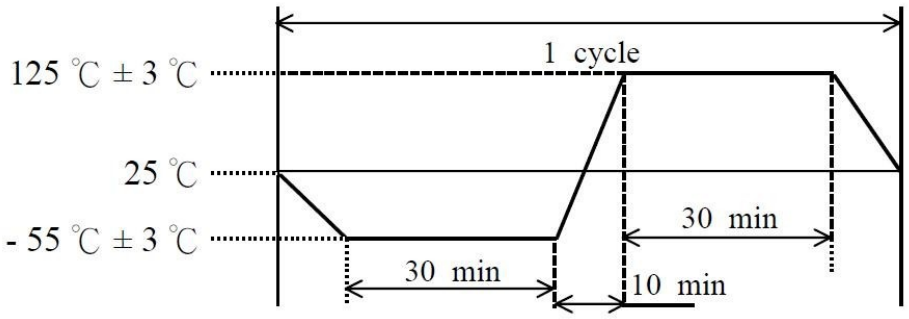
Available for Lead Free Soldering

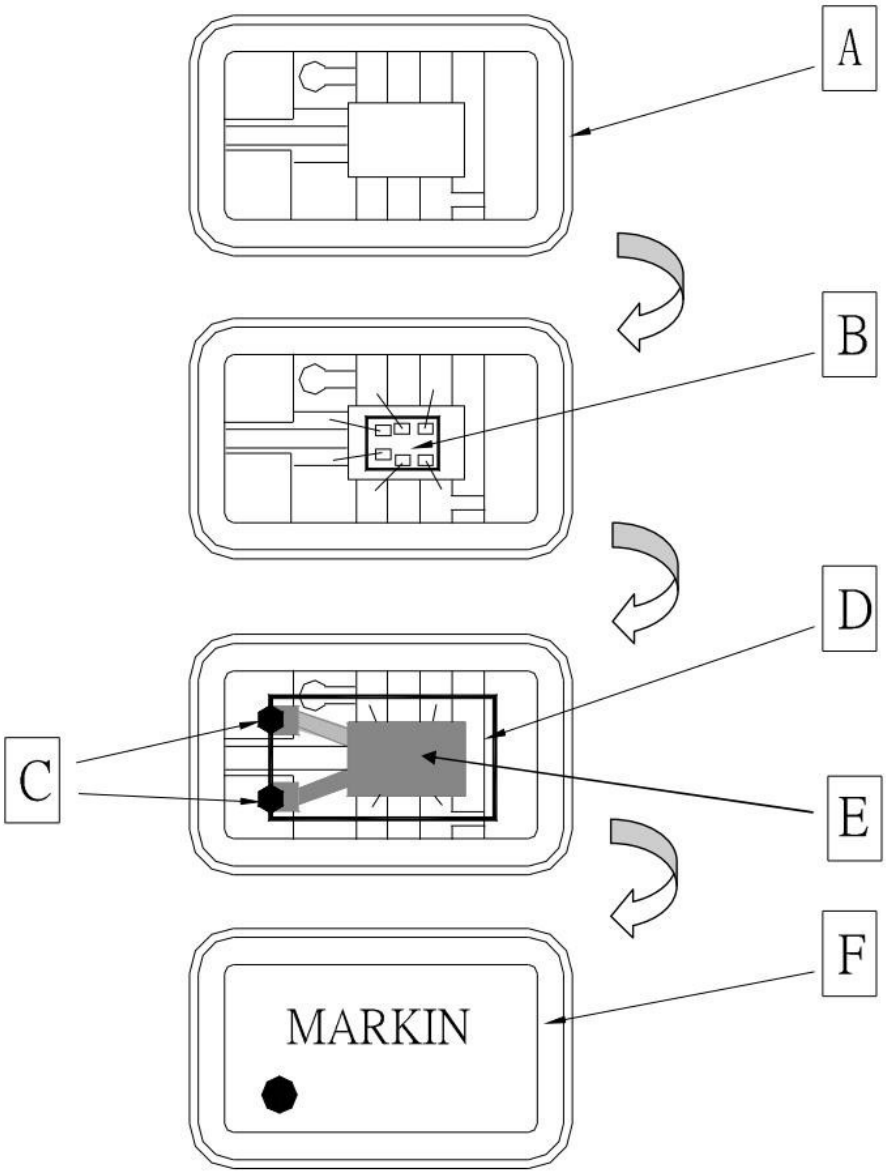
<table>
<tr><td>(1)</td><td>Preheat</td><td>160~180 deg.C</td><td>120sec.</td></tr>
<tr><td>(2)</td><td>Primary heat</td><td>220 deg.C</td><td>60sec.</td></tr>
<tr><td>(3)</td><td>Peak</td><td>260 deg.C</td><td>10sec. Max.</td></tr>
</table></td><td>MIL-STD-202F</td></tr>
</table>

7. Environmental Endurance: Provided that measurement shall be carried out afterletting it alone in the room temperature for 1 hour.

	Item	Conditions	Specifications
7.1	Humidity	+85℃±2℃,RH 80~85%, Duration of 500 hours. The units are then allowed to stand for approx 2 hours in room temperature before checking	MIL-STD-202F
7.2	Storage in Low Temperature	Temperature: -40±2℃ , Duration of 500 hours. The units are then allowed to stand at room temperature for approx 2 hours before checking.	MIL-STD-883E
7.3	Storage in High Temperature	Temperature:+85℃±2℃, Duration of 500 hours. The units are then allowed to stand at room temperature for approx 2 hours before checking.	MIL-STD-883E
7.4	Thermal Shock	Temperature 1: -55℃±5℃ Temperature 2: 125℃±5℃ Temperature change between T1 and T2 at soonest Run 100 cycles, maintain T1 and T2 30minutes each in one cycle (Refer to Fig-4)	MIL-STD-883E



8. **STRUCTURE ILLUSTRATION**



COMPONENTS		METERIALS	COMPONENTS		METERIALS
A	Base (Package)	Ceramic(Al_2O_3) + Kovar(Fe+Co+Ni)	D	Crystal blank	SiO_2
B	IC Chip	Si	E	Electrode	Cr+Ag
C	Conductive adhesive	Ag+Silicon resin	F	Lid	Kovar(Fe+Co+Ni)

9. The production technical :

Reflow Condition：