

SMD CRYSTAL OSCILLATOR

1. ELECTRICAL CHARACTERISTICS

■ Standard atmospheric conditions

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

Ambient temperature : $25\pm 5^{\circ}\text{C}$

Relative humidity : 40%~70%

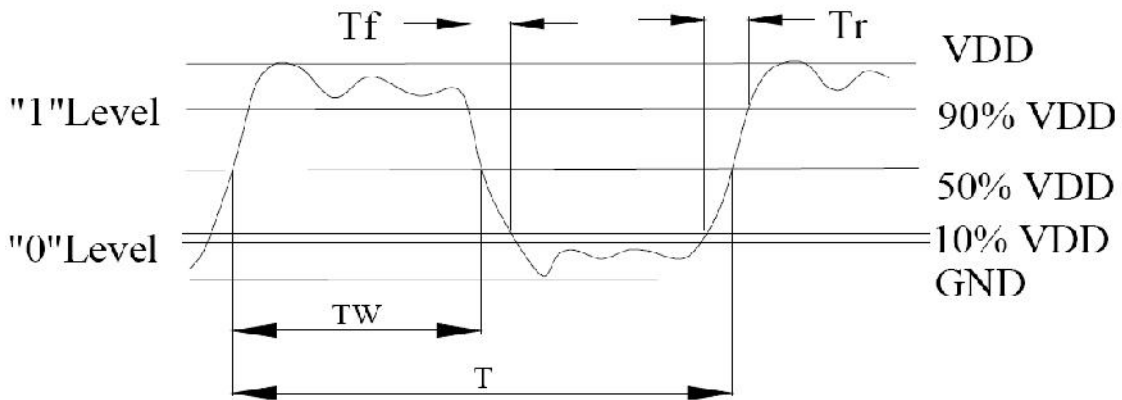
If there is any doubt about the results , measurement shall be made within the following limits :

Ambient temperature : $25\pm 3^{\circ}\text{C}$

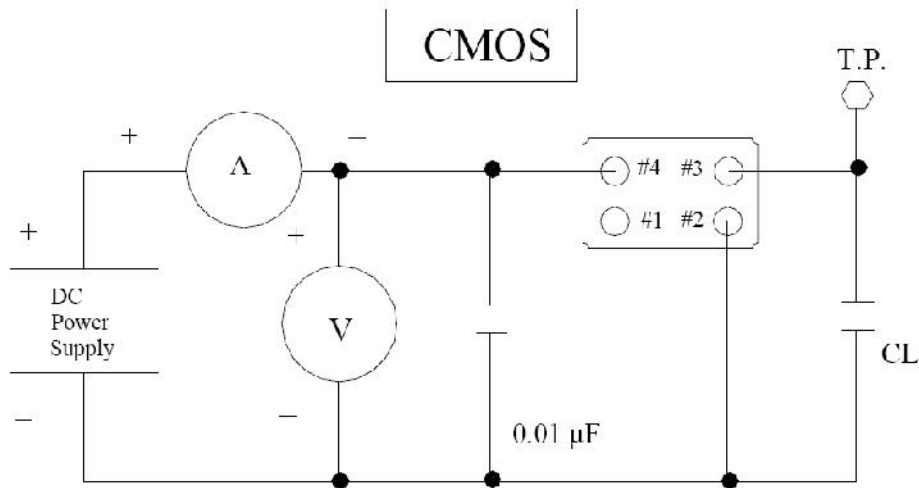
Relative humidity : 40%~70%

Frequency Range	24.000MHz
Output Type	CMOS
Output Load	15pF
Oscillation Mode	Tri-State
Supply Voltage	3.3V
Frequency Stability	$\pm 50\text{ppm}$
Operating Temperature Range	$-20^{\circ}\text{C} - +70^{\circ}\text{C}$
Storage Temperature Range	$-55^{\circ}\text{C} - +125^{\circ}\text{C}$
Voltage Vol(Max.)/ Voh(Min.)	0.1VDD/ 0.9VDD
Rise(Tr)/Fall(Tf) Time	10ns Max
Supply Current	15mA Max
Symmetry	40/60%
Start-up Time	10ms Max
Phase Jitter(12KHz-20MHz)	3ps Max
Aging(at 25°C)	$\pm 3\text{ppm/year Max}$

2. C - MOS LOAD OUTPUT WAVEFORM



3. C - MOS LOAD TEST CIRCUIT



***Because SMA series has no by pass capacitor.
 So,we recommend our customer to use capacitor 0.01 μF
 in join Vcc and GND.

4. MARKING

WTL5

.24.0

INSTRUCTIONS:

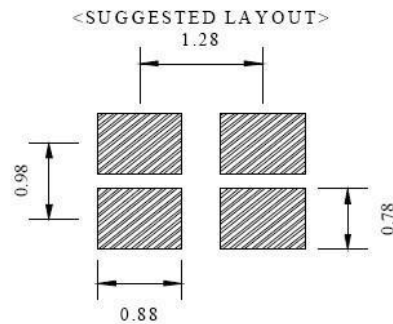
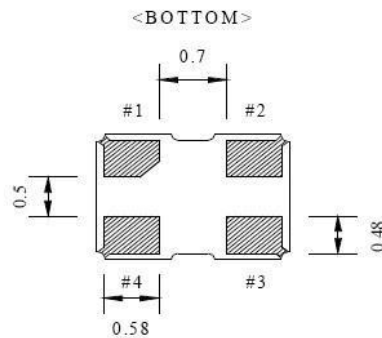
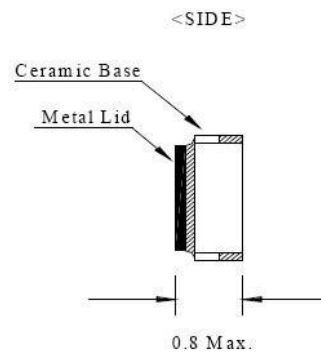
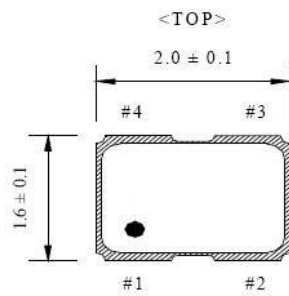
WTL=WTL brand

5= Year code

.= oscillator code

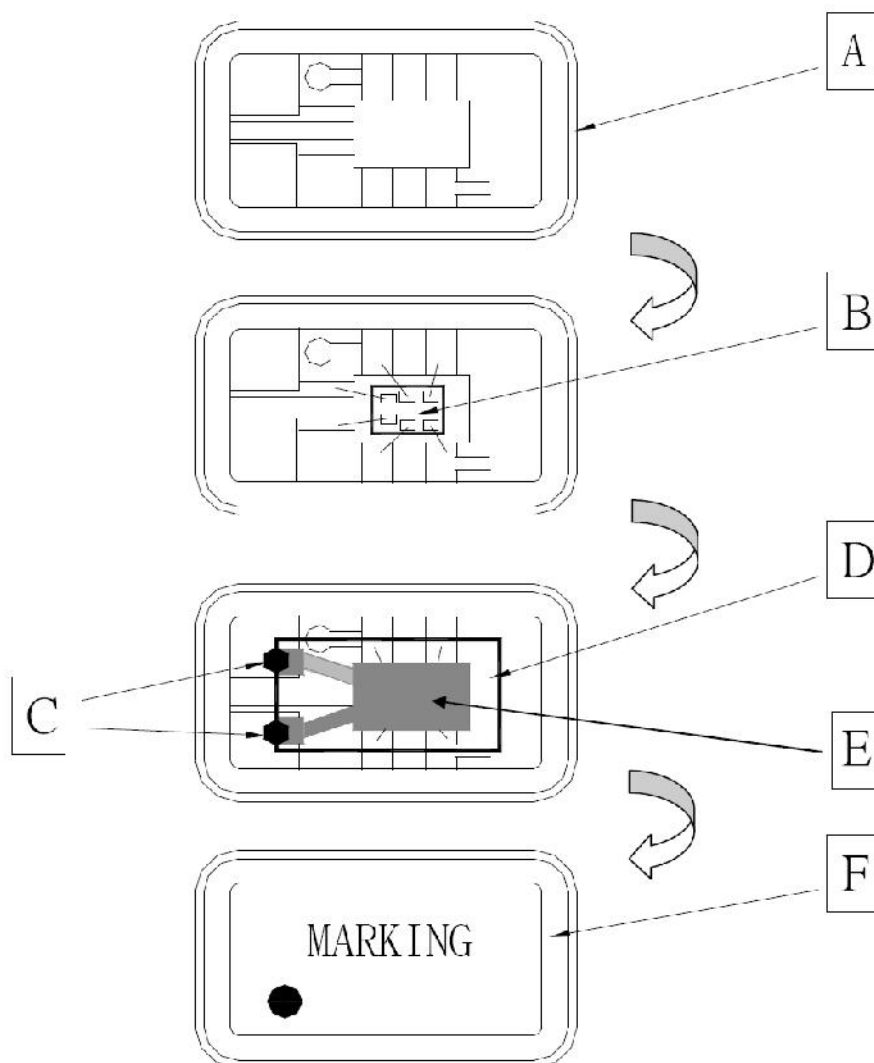
24.0=first 3 code of frequency

5. DIMENSION :



#1 E/D #2 GND
 #4 VDC #3 OUTPUT

6 . STRUCTURE ILLUSTRATION

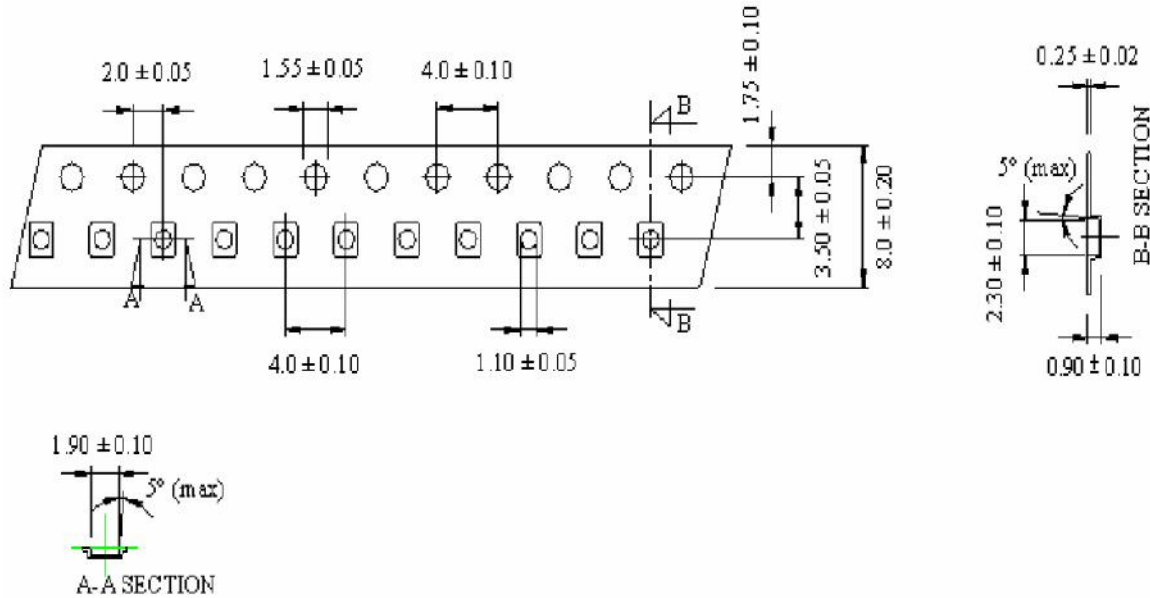


COMPONENTS		MATERIALS	COMPONENTS		MATERIALS
A	Base (Package)	Ceramic (Al ₂ O ₃)+Kovar (Fe/Co/Ni)	D	Crystal blank	SiO ₂
B	IC chip	-	E	Electrode	Cr / Ag
C	Conductive adhesive	Ag / Silicon resin	F	Lid	Fe/Co/Ni

7. PACKING :

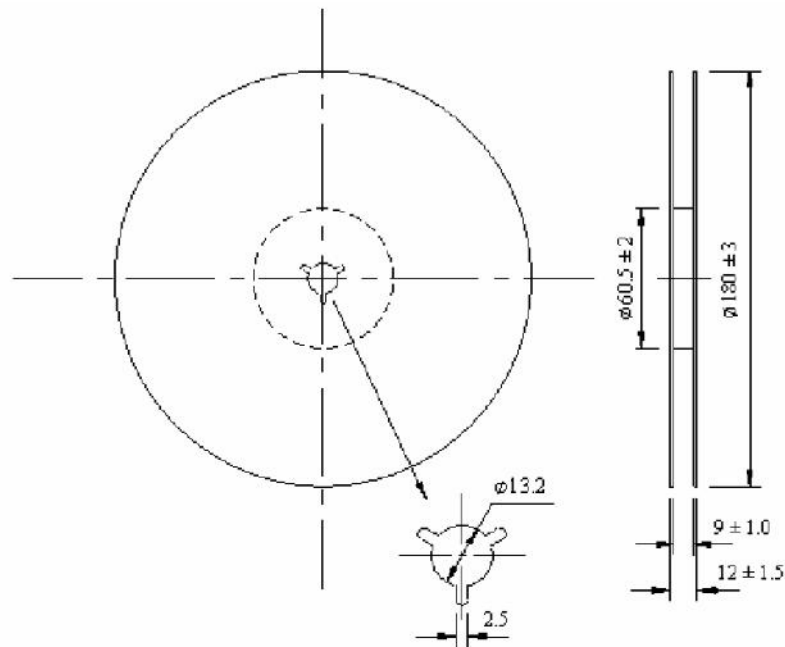
TAPE SPECIFICATION

(Unit : mm)

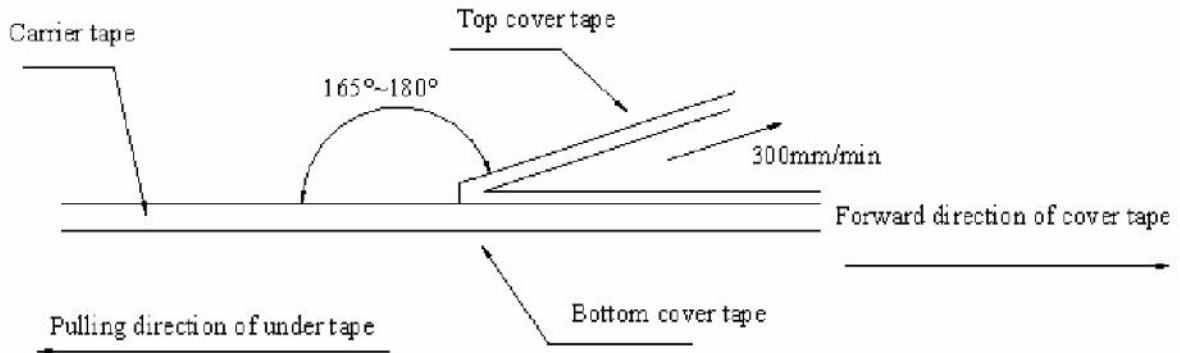


OUTLINE DIMENSION

(Unit : mm)



8. COVER TAPE ADHESION STRENGTH :



*** In the case, the cover tape is pulled off under the above conditions, the cover tape adhesion strength should be 10.2g~71.4g Plastic tape: 10.2g~71.4g
 (Cover tape adhesion strength)

9. SOLDERING REFLOW PROFILE

