



APPROVAL SHEET

Item : YSO110TR Crystal Oscillator

Spec. no : 54MHZ 1.8V~3.3V $\pm$ 10PPM 2520

Freq : 54.000 MHz

Customer Approved	Checked By	Issued By

請自發行日起2週內簽回此份規格書，若未簽回，則視為同意此規格。



RoHS Compliant





SPECIFICATION OF OSCILLATOR

Customer :

SPEC NO : OT252054MJBA4SL

Date :

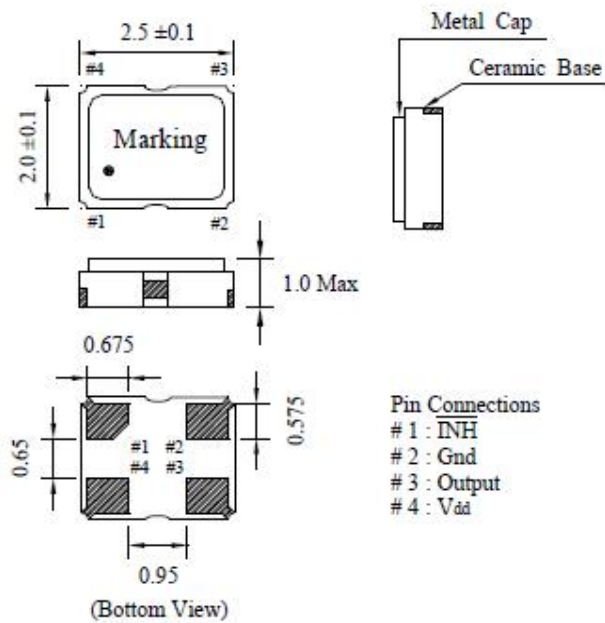
1. 型名 (Type)	<u>YSO110TR (Lead Free Parts)</u>
2. 周波數(Frequency)	<u>54.000 MHz</u>
3. 電源電壓 (Power supply voltage)	<u>1.8V ~ 3.3V</u>
4. 周波數誤差(Frequency tolerance)	<u>±10ppm at 25 ± 3°C</u>
周波數安定度(Frequency stability)	<u>±30ppm (-40~+85°C)</u>
5. 溫度範圍(Temperature range)	
5.1 動作溫度範圍(Operating temp. range)	<u>-40 to +85°C</u>
5.2 儲存溫度(Storage temp.)	<u>-55 to +125°C</u>
6. 驅動能力(Driving ability)	<u>15pF</u>
7. 波形對稱性(Symmetry)	<u>40% to 60%</u>
8. 立上/立下時間(Rise,fall time)	<u>6nS Max.</u>
9. 出力電壓(Output voltage)	
9.1 High Output Voltage	<u>Voh : 0.9V_{dd} Min.</u>
9.2 Low Output Voltage	<u>Vol : 0.1V_{dd} Max.</u>
10. 消費電流(Current consumption)	<u>12mA Max.</u>
11. 老化值(Aging)	<u>±3ppm/year Max.</u>

Marking

YXC 。9507I

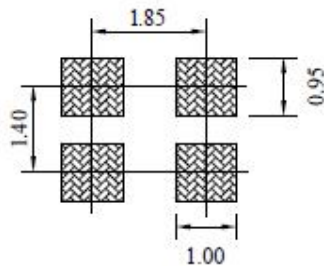
SPECIFICATION OF OSCILLATOR

Dimensions



$\overline{\text{INH}}$ Function	
#1	#3(Output)
Open	Active
"H"Level	Active
"L"Level	High Z(Oscillation Stopped)

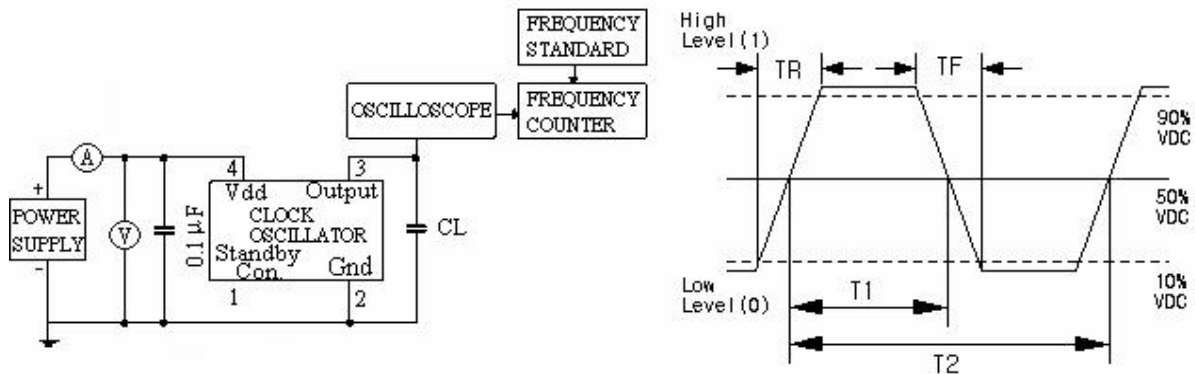
Recommended Soldering Pattern



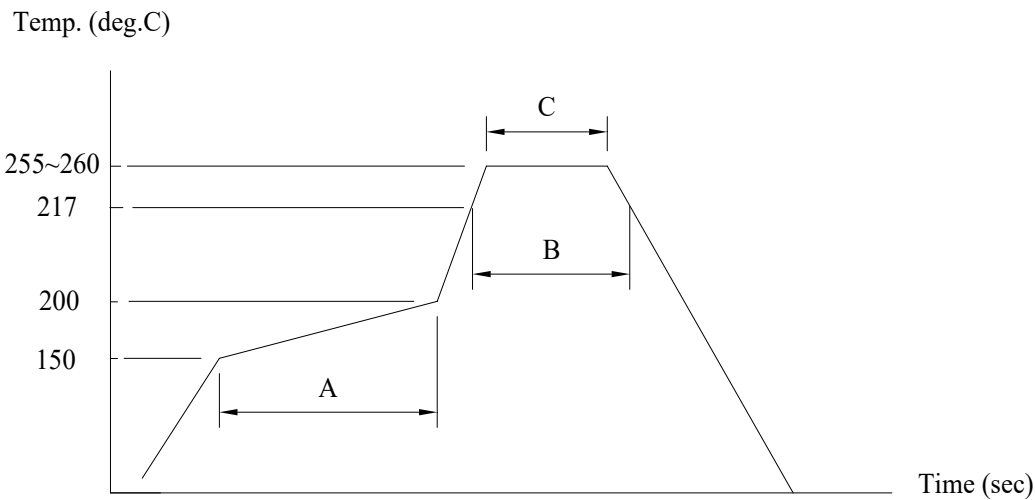
	Date	Name	Unit : mm	
Drawn	20.Jun.2014	Leo	Dimension of External	Drawing No. PKO-252010-0620
Checked	20.Jun.2014	Iris		
Approved	20.Jun.2014	Wan		

SPECIFICATION OF OSCILLATOR

Test Circuit



Soldering Reflow



(A)→Preheating area : 150~200°C, 60~120sec.

(B)→Heating area : 217°C, 60~150sec.

(C)→Peak temperature : 255~260°C, 30sec. Max.

Ramp-up rate (217→260°C) : 3°C/sec. Max.

Ramp-down rate (260→217°C) : 6°C/sec. Max.

Time 25°C→260°C : 480sec. Max.

*Reference JEDEC J-STD-020

SPECIFICATION OF CRYSTAL & OSC UNITS

Reliability Test (applicable to SMD type OSC and X'tal)

Condition B.2

Test Items	Test Condition	Specification	
		General OSC (Note:1)(Note:3)	General X'tal (Note:2)
1. Gross Leak Test	Electronic test fluid 125°C/30sec	No continuous bubble	
2. Fine Leak Test	Bombing of He 4.5kg/cm ² for 1.5 hours	Less than 1*10 ⁻⁸ atm.c.c./sec, Helium	
3. Drop Test	a ~19.999MHz(Fund.) → 75 cm height b. 20~29.999MHz(Fund.) → 50 cm height c. 30~ MHz(Fund.) → 20 cm height on hard wooden surface / 3 times (thickness more than 30 mm)	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
4. Vibration Test	Freq. range: 10~55Hz Peak to peak amplitude:1.5mm 3 direction(X,Y,Z) , each 60min.	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
5. Shearing Test	Weight : 5N, Test duration : 10±1 sec	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
6. Substrate Bending Test	Test duration : 5±1 sec Amount of substrate : 3mm	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
7. Resistance to Soldering Test	IR Reflow furnace with the condition 2 times. Peak temp.260±3°C , 10sec(Min.)	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
8. Low Temp. Exposure Test	-40±3°C , 240±12 hrs	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
9. Aging Test	125±3°C , 240±12hrs	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
10. High Temp. & Humidity Test	+85°C±5°C & 85%±5% R.H. , 240±12 hrs	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$
11. Temperature Cycling Test	-40±3°C/15±3min ~ +85±3°C/15±3min 15cycles	$\Delta F \leq \pm 10 \text{ PPM}$, Duty within spec.	$\Delta F \leq \pm 10 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 10 \text{ ohms}$

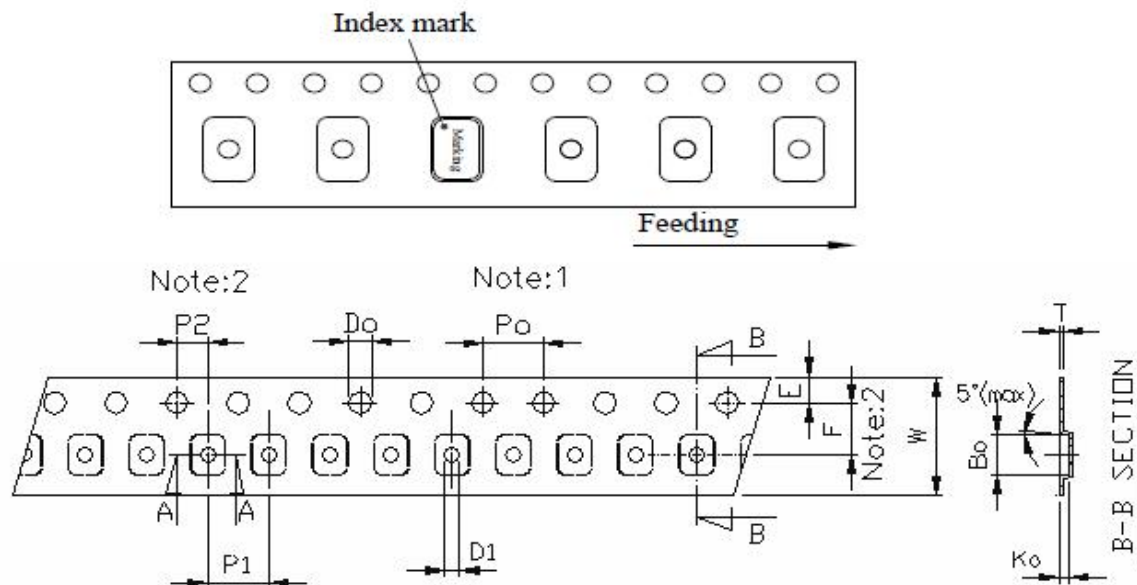
Note:1 → For communication application the spec. demanded " $\Delta F \leq \pm 5 \text{ PPM}$, Duty within spec." °

Note:2 → For communication application the spec. demanded " $\Delta F \leq \pm 5 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 5 \text{ ohms}$ " °

Note:3 → For TCXO series products demanded " $\Delta F \leq \pm 2 \text{ PPM}$, Duty(Vpp) within spec" °

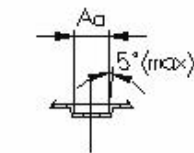
SPECIFICATION OF TAPE & REEL

Taping



Unit: mm

Symbol	Spec.
K1	—
Po	4.0 ± 0.10
P1	4.0 ± 0.10
P2	2.0 ± 0.05
Do	1.55 ± 0.05
D1	1.10 ± 0.10
E	1.75 ± 0.10
F	3.50 ± 0.05
10Po	40.0 ± 0.20
W	8.0 ± 0.20
T	0.25 ± 0.05



$$A0 = \frac{2.25 \pm 0.05}{\text{mm}}$$

$$B0 = \frac{2.75 \pm 0.05}{\text{mm}}$$

$$Ko = \frac{1.15 \pm 0.05}{\text{mm}}$$

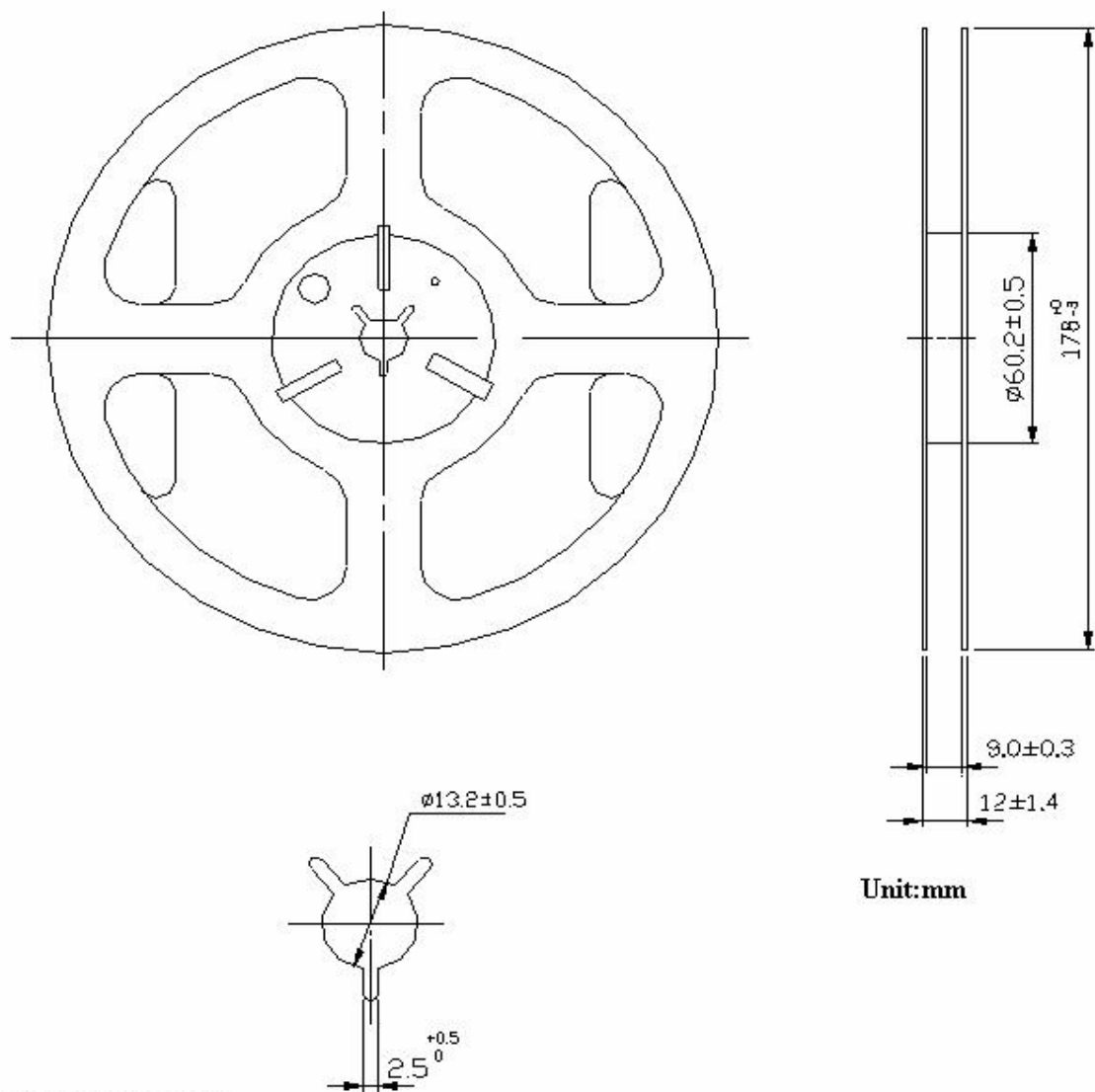
Notice:

- 1.10 Sprocket hole pitch cumulative tolerance is $\pm 0.2\text{mm}$
2. Pocket position relative to sprocket hole measured as true position of pocket not pocket hole.
3. $A0$ & $B0$ measured on a plane 0.3mm above the bottom of the pocket to top surface of the carrier.
4. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
5. Carrier camber shall be not than 1mm per 100mm through a length of 250mm.

	Date	Name	Unit : mm	
Drawn	11.Jan.2018	Leo	Title	Drawing No.
Checked	11.Jan.2018	Iris	Tape & Reel Dimension	C009-020211-O-1101-R
Approved	11.Jan.2018	Wan		

SPECIFICATION OF TAPE & REEL

Reel



Unit:mm

Q'ty:3000pcs/reel

	Date	Name	Unit : mm	
Drawn	22.Jan.2007	Leo	Title Tape & Reel Dimension	Drawing No. C009-0709-A-1001
Checked	22.Jan.2007	Iris		
Approved	22.Jan.2007	Wan		