



PRODUCT SPECIFICATION SHEET



Customer	-		
Customer P/N	TBA		
Product Type	Temperature Compensated Crystal Oscillator		
Part Number	2TG2500003	Version	S1
Part Description	SMD TCXO 2.5 x 2.0		
Nominal Frequency	25.000000MHz		

Prepared	Li Xiang
Reviewed	Kuro Peng
Approved	Xing Yue
Date	2023/6/20

Customer's Approval & Date :

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Moisture Sensitivity Level 1

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*** Attention**

If you intend to use products on the controlling equipment that relate to medical, aeronautical, aerospace, military science, space and etc, please make sure to let us know your intentions in advance.

Ultrasonic related process may cause damage to crystal blank by resonance itself. If ultrasonic related process is used, we strongly recommend to assess the damage risk under related ultrasonic conditions before use in production.

1. History of Specification Revision

Ver.	Contents	Date	Reviser	Remark
S0	Initial release	2021/4/13	Han Shuang	
S1	Update the overall version	2023/6/20	Li Xiang	

2. Electrical Specifications

2.1 Operation conditions

#	Parameters	Min.	Typ.	Max.	Unit	Remark
1	Nominal frequency	25.000000			MHz	-
2	Supply voltage (Vcc)	1.70	-	3.30	V	-
3	ESD	HBM > 2000V			-	JESD22-A114-B
4	MSL	Level 1			-	IPC/JEDEC J-STD-033C
5	Current consumption	-	-	2.0	mA	-
6	Operating temperature range	-40	-	+85	°C	-
7	Storage temperature range	-40	-	+85	°C	-

2.2 Output characteristics

#	Parameters	Min.	Typ.	Max.	Unit	Remark
1	Output type	Clipped sine wave			-	Decoupling capacitor is required in external circuit
2	Standard output Load	10 KΩ//10 pF			-	-
3	Output level	0.8	-	-	V _{pp}	-
4	Duty cycle	45	50	55	%	Ground level
5	Start-up time vs. output level	-	-	2.0	ms	≥90% of V _{pp}

2.3 Frequency characteristics

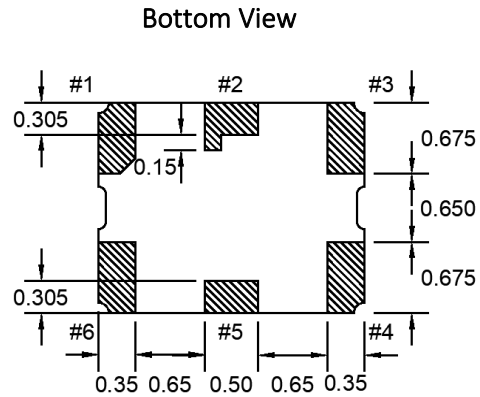
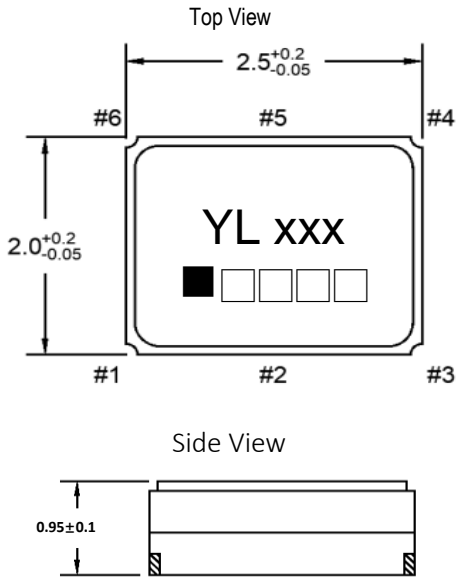
#	Parameters	Min.	Typ.	Max.	Unit	Remark
1	Nominal frequency	25.000000			MHz	-
2	Frequency tolerance after reflow	-2.0	-	+2.0	ppm	At 25±2°C after 2 times reflow, refer to nominal frequency
3	Frequency stability vs. temperature	-0.5	-	+0.5	ppm	Within -40 to +85°C, refer to frequency at 25°C
4	Frequency stability vs. supply voltage	-0.2	-	+0.2	ppm	±5% Vcc variation
5	Frequency stability vs. load variation	-0.2	-	+0.2	ppm	±10% load variation
6	Frequency Aging	-1.0	-	+1.0	ppm/First year	-

2.4 Phase noise characteristics

#	Parameters	Min.	Typ.	Max.	Unit	Remark
1	Phase noise at 1kHz offset	-	-	-126	dBc/Hz	-

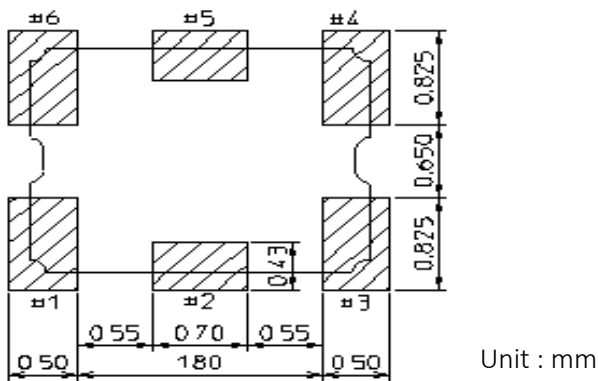
3. Product Design

3.1 Package dimensions and pad functions

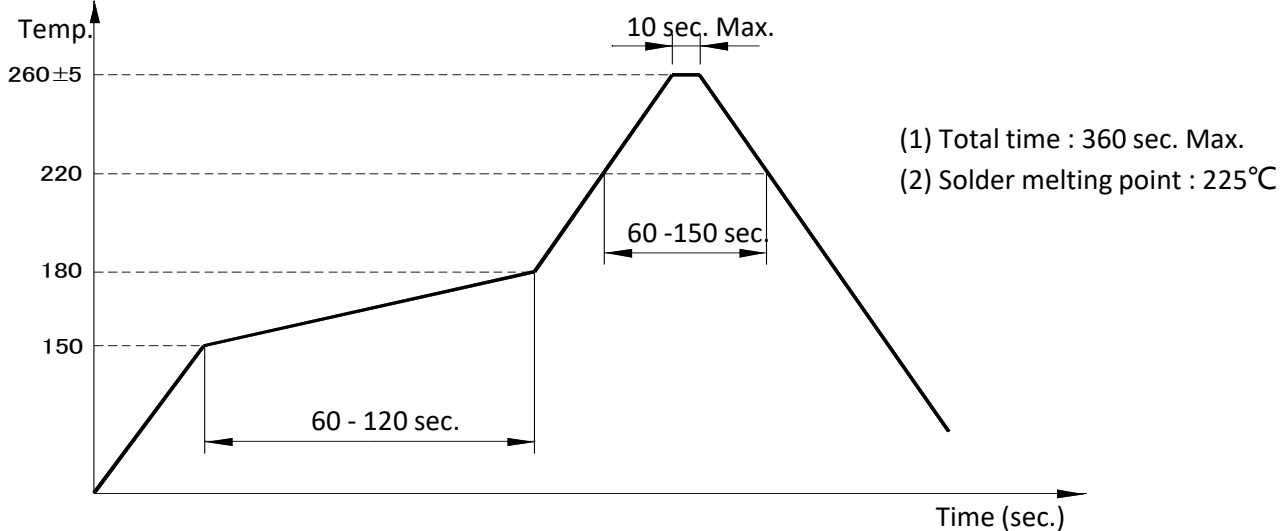


Pad	Function	Symbol
1	Ground	GND
2	N.C	N.C
3	Ground	GND
4	Output	OUT
5	N.C	N.C
6	Supply voltage	Vcc

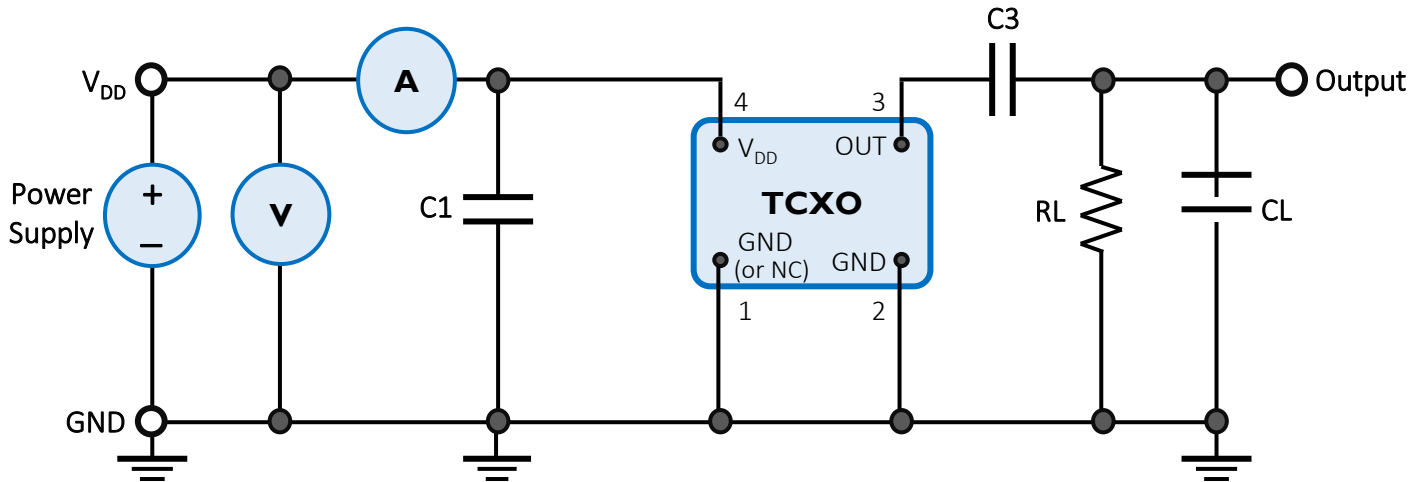
3.2 Recommended land pattern



3.3 Recommended reflow profile



4. Testing Circuit



External Components:

Parts	Function	Recommended
C1	AC noise bypass for V_{DD}	10nF
C3	DC block for output	10nF
RL	Load resistance	10K Ω
CL	Load capacitance	10pF