

# OA Series HALF SIZE Crystal Oscillator

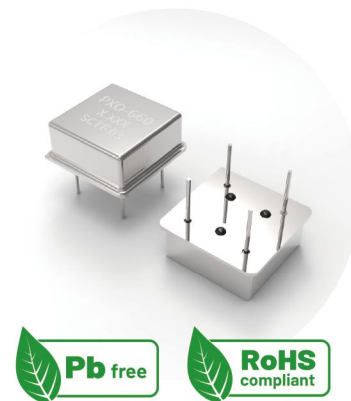
OA : 12.7×12.7×5.4 mm | PXO-8

## Feature

- CMOS compatible logic levels
- Tri-state function available
- Supply voltage range : 1.62V ~ 5.5V(Compatible with 1.8V, 2.5V, 3.3V , 5.0V)
- RoHS Compliant / Pb Free

## Applications

- Wireless Devices
- Internet of Things (IoT) devices
- Ethernet/Gigabit Ethernet
- Audio, Video, Gaming products
- Micro base station



## Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.	1.000		100.000	MHz	
Operating Temperature	T_use	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T_stg	-55		+125	°C	
Supply Voltage	Vdd	1.62	1.8/2.5/3.3/5.0	5.5	V	
Output Load	L_CMOS		15		pF	
Current Consumption	Icc			25	mA	1MHz ≤ Freq. < 40MHz
				60		40MHz ≤ Freq. < 80MHz
				80		80MHz ≤ Freq. < 160MHz
Duty Cycle	SYM	40		60	%	50 % Vdd level, L_CMOS ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% Vdd to 90% Level
Start-up Time	T_str			10	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9Vdd			V	
Low output voltage	V <sub>OL</sub>			0.1Vdd	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7Vdd			V	Output will be disable if OE is Logic 0 Output will be enable if OE is Logic 1 or open
Enable Voltage Low (Logic 0)	V <sub>IL</sub>			0.3Vdd	V	
Aging	f_age			3	ppm	1st. Year at 25°C

## Frequency Stability & Operating Temperature Range

Temp.	FT	±30ppm	±50ppm
	-20°C to +70°C	★	★
-40°C to +85°C	△		★

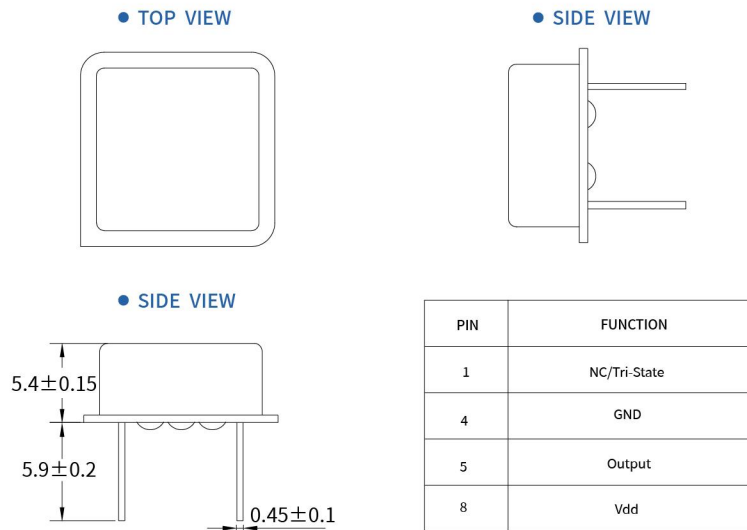
★: Available    △: Conditional

All condition: Include 25°C tolerance, operating temperature range , input voltage change, aging, load change.

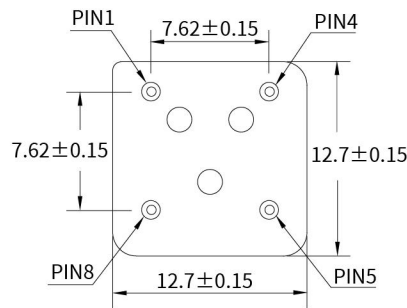
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## Dimensions (UNIT:mm)



## Solder pad layout (UNIT:mm)



**Notes:**

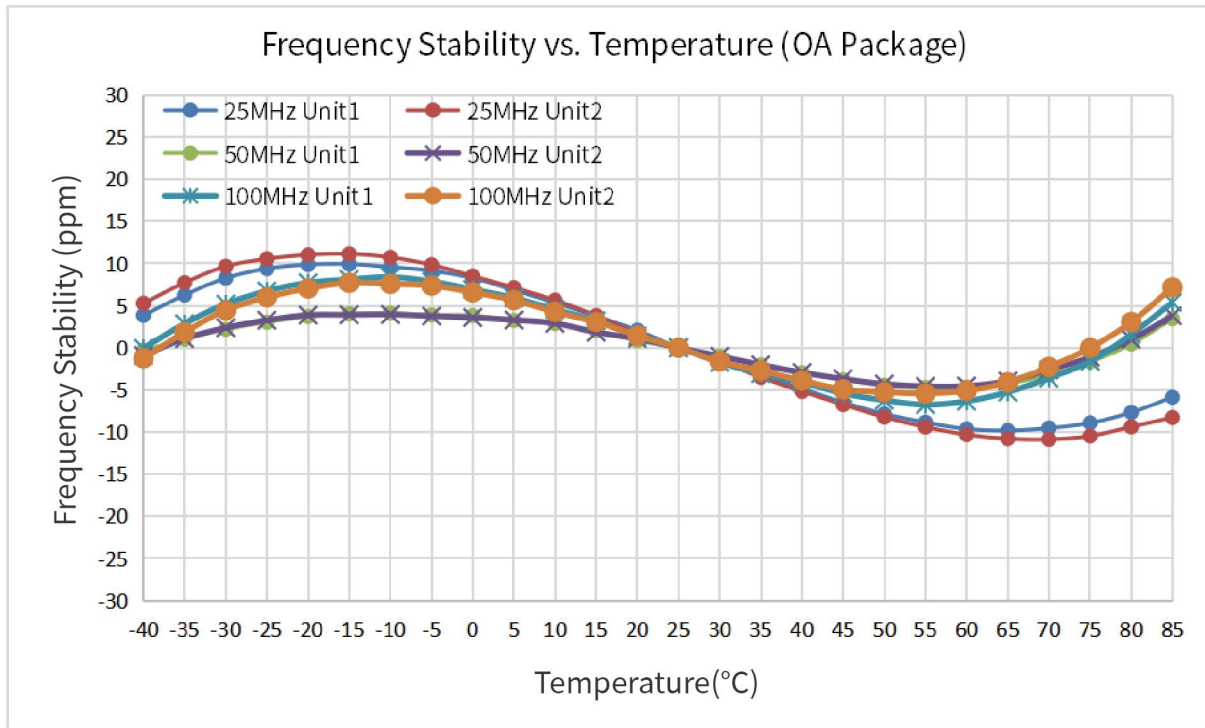
NC: If the product does not contain Tri-state function, no matter how PIN1 connected, the product is working properly.  
 Tri-state: PIN 1 connected to Vdd or floating, the product is working properly; connected to GND, stops working.

## Options and Part Identification : Example SXOA1.000B20F30TNN

Company	Ceramic Package	Frequency Code [MHz]	Supply Voltage	Frequency Tolerance	Operating Temperature	Frequency Drift	Output	Current Consumption	Phase Noise
<b>SX</b>	<b>OA</b>	<b>X.XXX</b>	<b>B</b>	<b>20</b>	<b>F</b>	<b>30</b>	<b>T</b>	<b>N</b>	<b>N</b>
Code Company		Frequency		Code Frequency Tolerance		Code Frequency Drift		Code Current	
SX SCTF		1.000 13.560 19.200 37.125		10 ±10ppm 20 ±20ppm		15 ±15ppm 20 ±20ppm 30 ±30ppm		N Standard	
			Code Voltage		Code Operating Temperature		Code Output		Code Phase Noise
	Code Ceramic Package		D 1.8V H 2.5V B 3.3V A 5.0V		E -20°C ~ +70°C F -40°C ~ +85°C		T CMOS 15pF H CMOS 30pF G CMOS 50pF		N Standard
	1M 2.0×1.6×0.75mm 2M 2.5×2.0×0.81mm 3M 3.2×2.5×0.95mm 5M 5.0×3.2×1.2mm 7M 7.0×5.0×1.3mm OA 12.7×12.7×5.4 mm [PXO-8] OB 20.4×12.8×4.9 mm [PXO-14]								

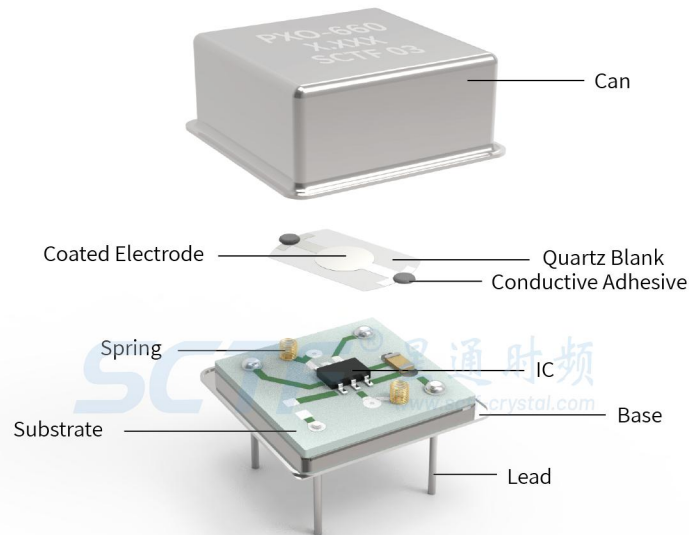
If you have other parameter requirements, you can contact **SCTF** at any time.

## Frequency Temperature Characteristics

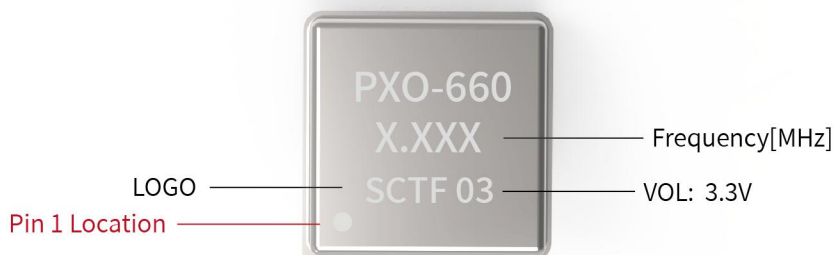


## Product Structure & Marking Information

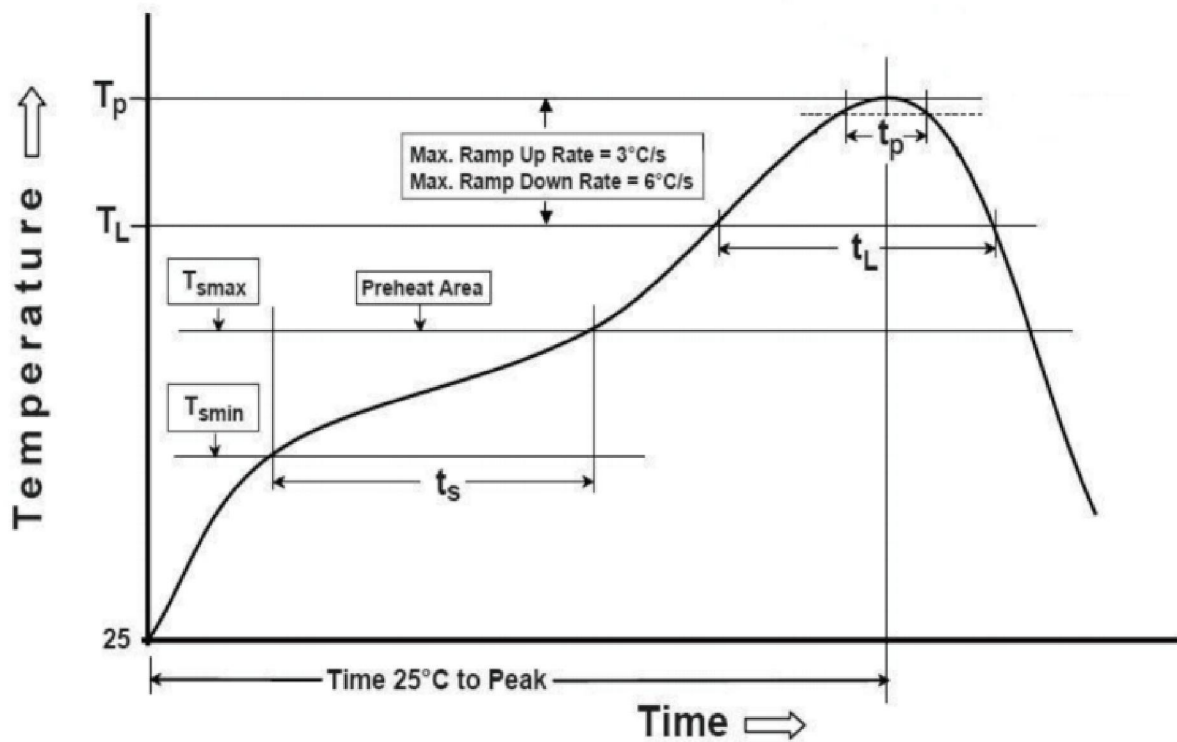
### Product Structure



### Marking Information



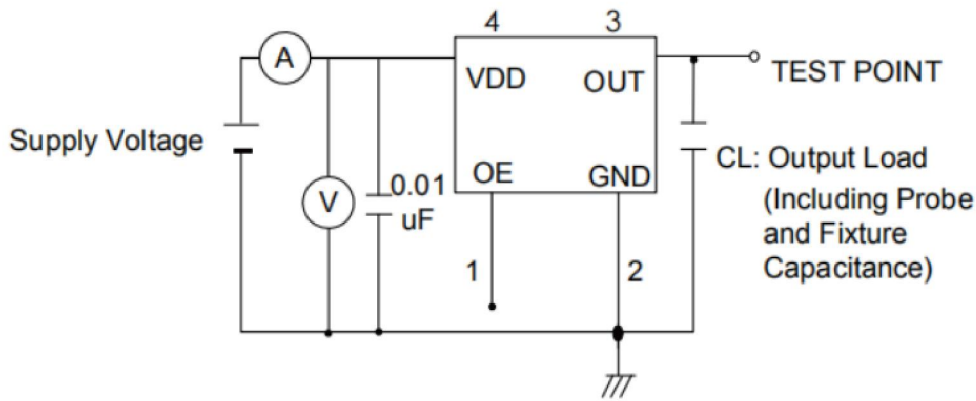
## Suggested Reflow Profile



Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak <ul style="list-style-type: none"> <li>● Temperature Min ( Ts min )</li> <li>● Temperature Max ( Ts max )</li> <li>● Time ( Ts min to Ts max )</li> </ul>	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate ( TL to Tp )	3°C/ second max.	3°C/ second max.
Time maintained above <ul style="list-style-type: none"> <li>● Liquidous temperature ( TL )</li> <li>● Time ( tL ) maintained above TL</li> </ul>	183°C 60-150 seconds	217°C 60-150 seconds
Peak package body temperature ( Tp )	235°C	260°C
Time within 5° C of the specified classification temperature ( Tp )	20 seconds	30 seconds
Ramp - down rate ( Tp to TL )	6°C/ second max.	6°C/ second max.
Time 25° C to peak temperature	6 minutes max.	8 minutes max.
<b>Suggest reflow times</b>	<b>2 Times max.</b>	

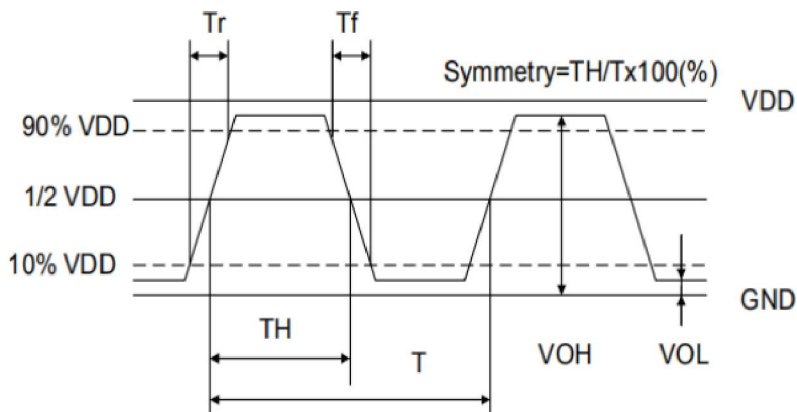


## Testing Circuit



※ Notes: PIN 1 connected to Vdd or floating, the product is working properly; connected to GND, stops working.

## Waveform Conditions



Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.

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## Packaging Information

T=Sheet and box (200pcs/sheet)



T=Sheet and box (1,000pcs/box)



## Common Frequencies – MHz

OA Series				
3.6864	4.000	4.9152	7.3728	8.000
8.192	10.000	11.0592	12.000	12.288
13.560	14.31818	16.000	18.432	20.000
22.1184	24.576	25.000	27.000	32.000
32.768	40.000	48.000	50.000	