

OB Series FULL SIZE Crystal Oscillator

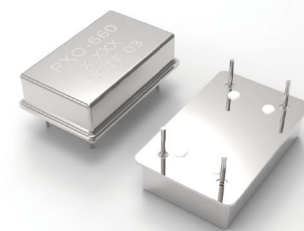
OB : 20.4×12.8×4.9 mm | PXO-14

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 _R / T _F			5	nS	10% Vdd to 90% Level
Start-up Time	T_str			10	mS	To 90% of Final Amplitude
High output voltage	V _{OH}	0.9Vdd			V	
Low output voltage	V _{OL}			0.1Vdd	V	
Enable Voltage High (Logic 1)	V _{IH}	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 _{IL}			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

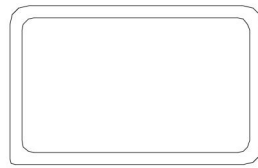
All condition: Include 25°C tolerance, operating temperature range , input voltage change, aging, load change.

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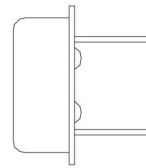
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Dimensions (UNIT:mm)

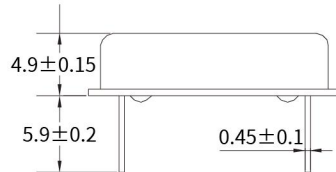
● TOP VIEW



● SIDE VIEW

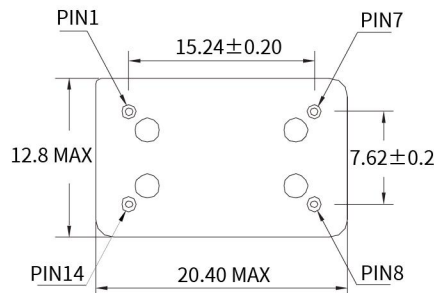


● SIDE VIEW



PIN	FUNCTION
1	NC/Tri-State
4	GND
5	Output
8	Vdd

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.

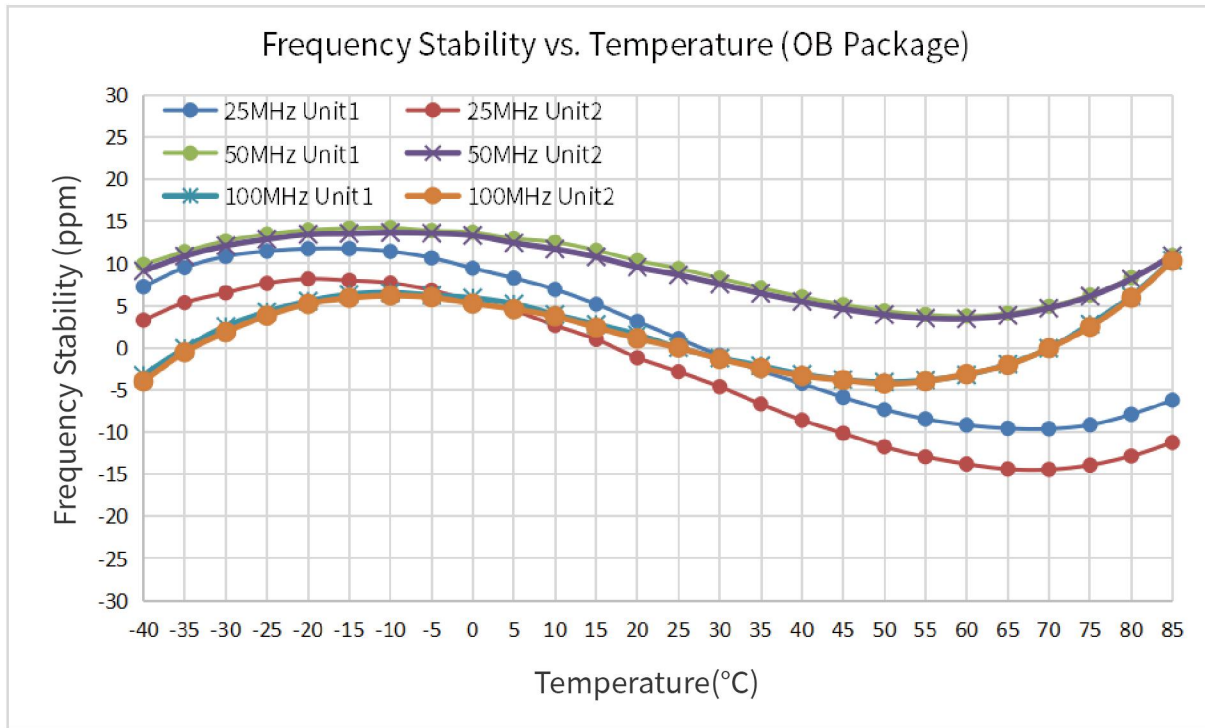
Tri-state: PIN 1 connected to Vdd or floating, the product is working properly; connected to GND, stops working.

Options and Part Identification : Example SXOB1.000B10F20TNN

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

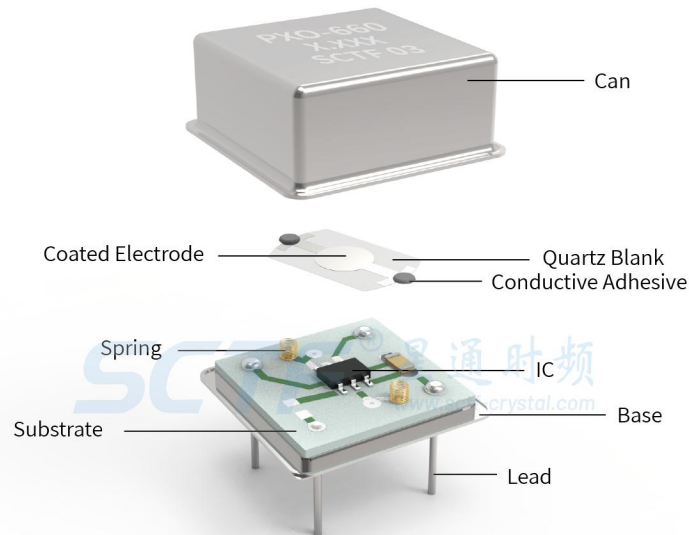
If you have other parameter requirements, you can contact **SCTF** at any time.

Frequency Temperature Characteristics



Product Structure & Marking Information

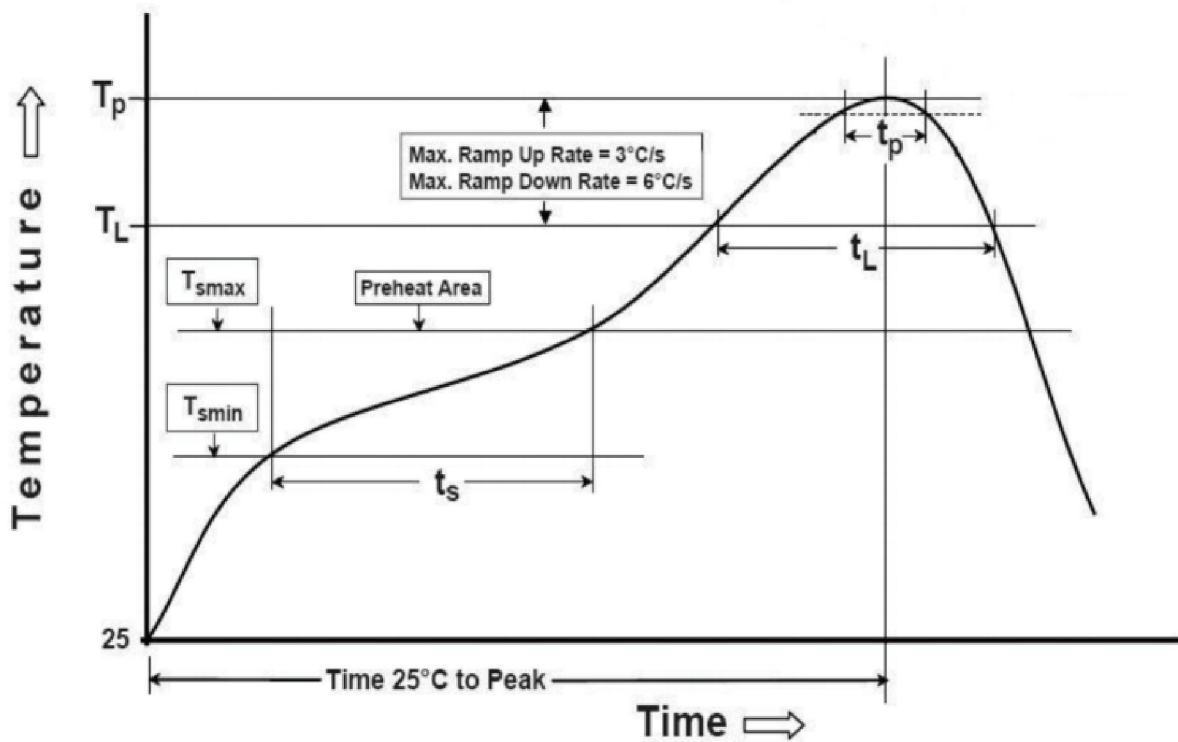
Product Structure



Marking Information



Suggested Reflow Profile

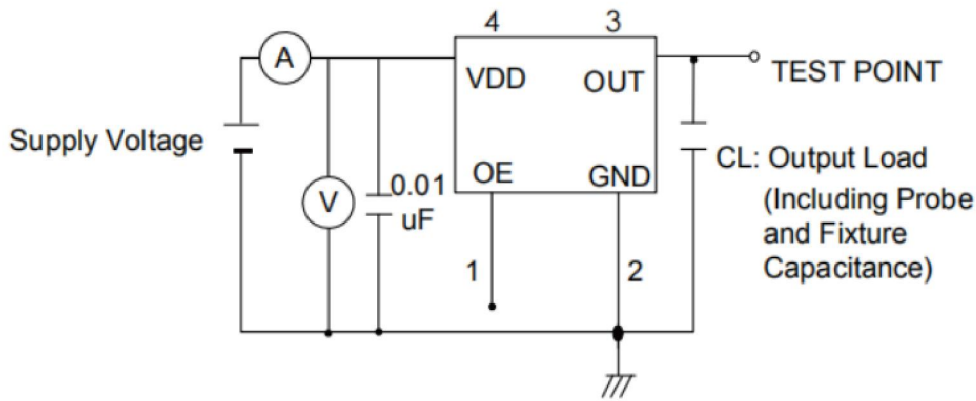


Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak <ul style="list-style-type: none"> ● Temperature Min (T_s min) ● Temperature Max (T_s max) ● Time (T_s min to T_s max) 	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate (T _L to T _p)	3°C/ second max.	3°C/ second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

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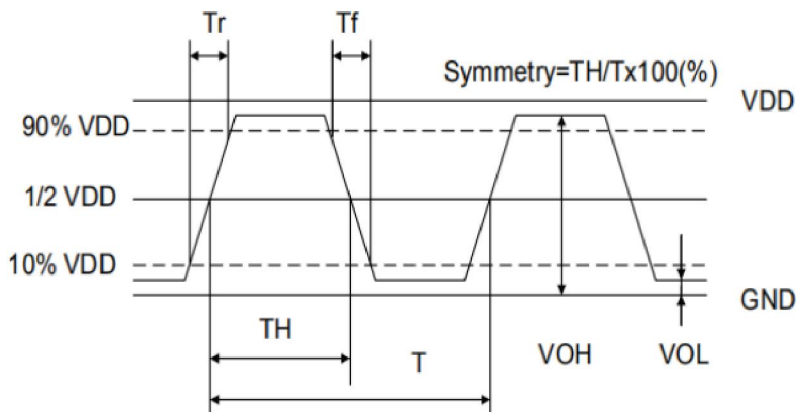
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Testing Circuit



※ 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 (100pcs/sheet)



T=Sheet and box (500pcs/box)



Common Frequencies – MHz

OB 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	