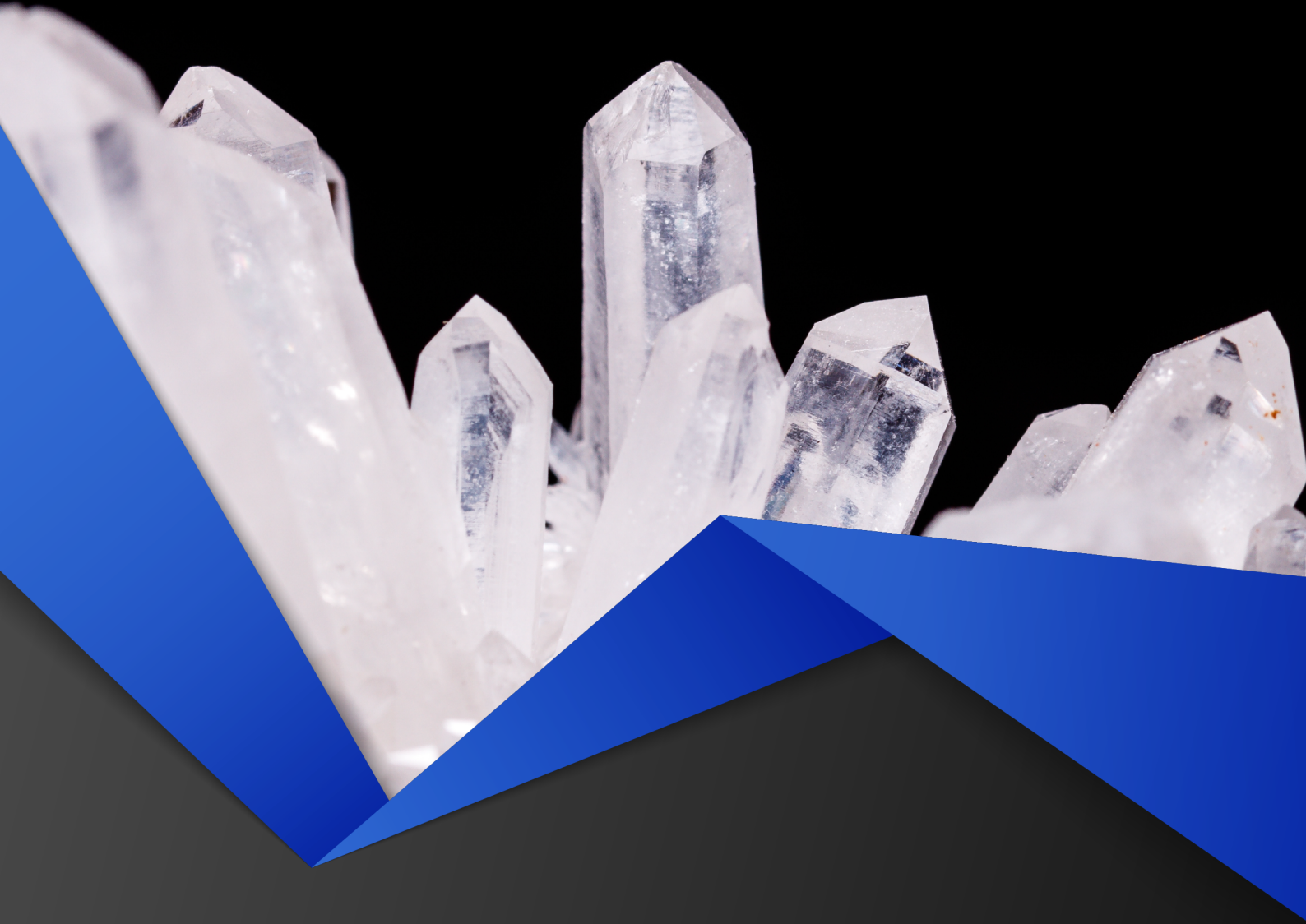


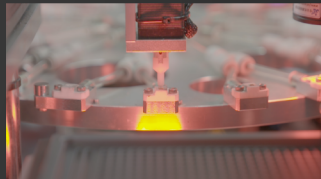
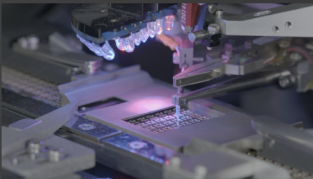
**SCTF**<sup>®</sup>



# MHz 时钟振荡器

SPXO

值得信赖的专业频率控制元件制造商



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## 企业简介

Company introduction

Since 2003

专业研发、生产、销售系列石英晶体及振荡器产品

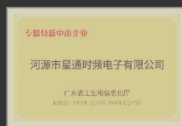
推行国际标准质量管理体系：ISO9001:2015、ISO14001: 2015、IATF16949: 2016

国家高新技术企业、专精特新企业、创新型中小型企业

符合ROHS、REACH标准

以客户为中心 视质量为生命

提供晶振及周边电路运用解决方案



**SCTF** 深圳市星通时频电子有限公司  
SHENZHEN SCTF ELECTRONICS CO.,LTD

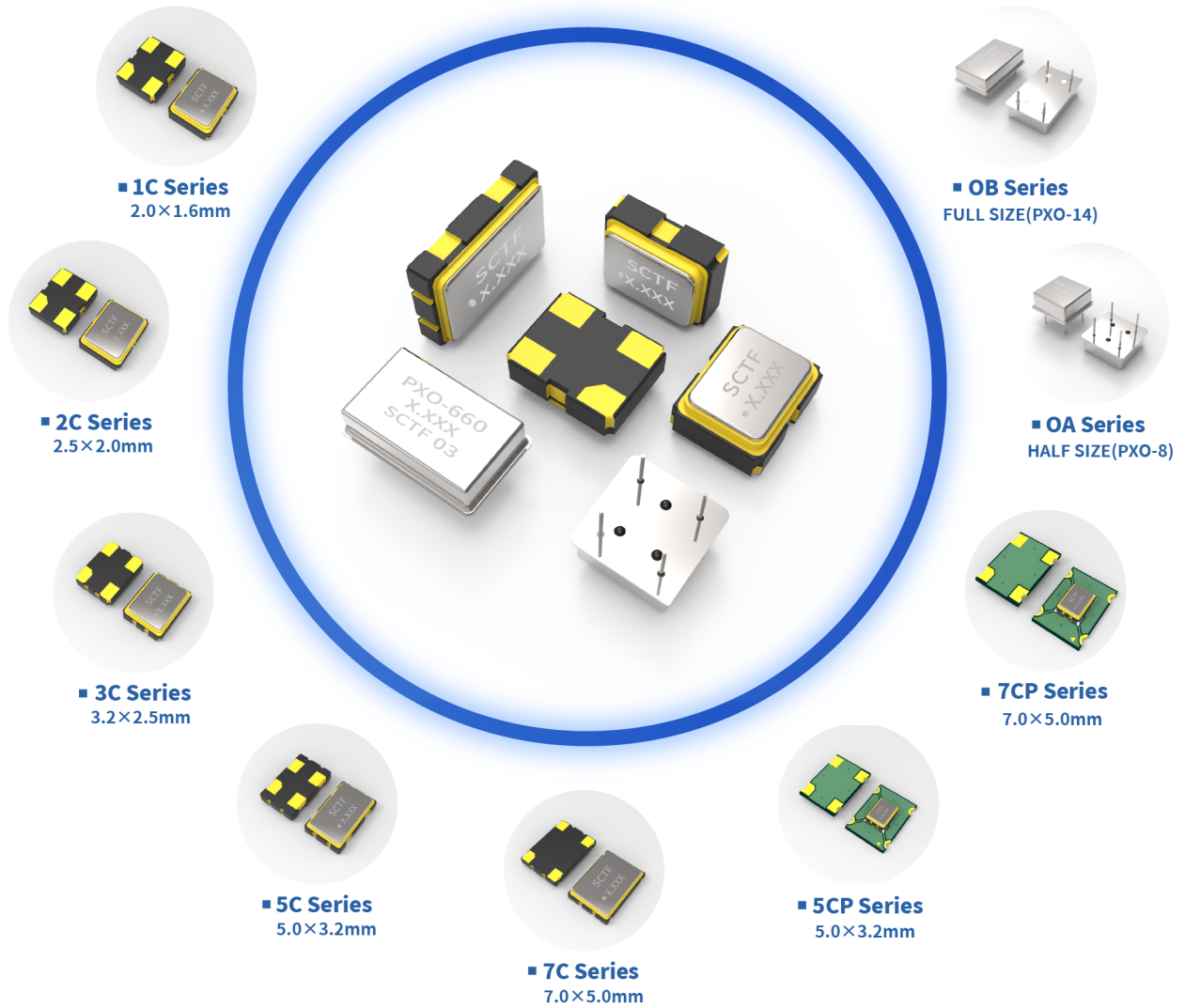
[www.sctf-crystal.com](http://www.sctf-crystal.com)

0755-86097105

[sales@sctf-crystal.com](mailto:sales@sctf-crystal.com)

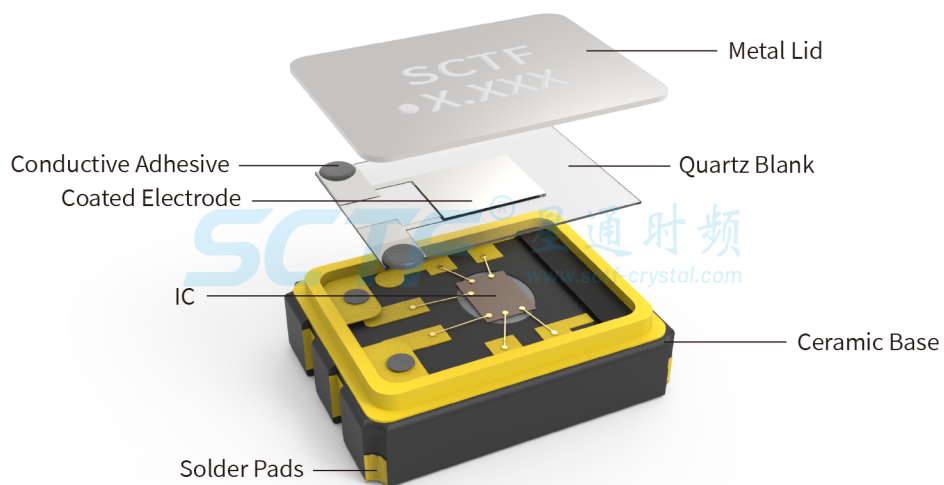
# 产品外观

Product Appearance



# 产品结构

Product Structure



# 产品选型指南

## Product Selection Guide

Item Series	Size [mm]		Frequency Range [MHz]	Supply Voltage [Typ.V]	Frequency Tolerance [@25°C; ±ppm]	Frequency Drift [±ppm]	Current Consumption	Operating Temperature
	L	W						
1C	2.0	1.6	1 ~ 54	1.8	10	15	20mA max.	-20°C~+70°C -40°C~+85°C
2C	2.5	2.0		2.5				
3C	3.2	2.5	1 ~ 160	1.8 2.5 3.3 5.0	20	20 30	40mA max.	
5C	5.0	3.2						
7C	7.0	5.0						
5CP	5.0	3.2						
7CP	7.0	5.0						
OA	12.7	12.7	1 ~ 100		20	30	80mA max.	
OB	20.4	12.8						

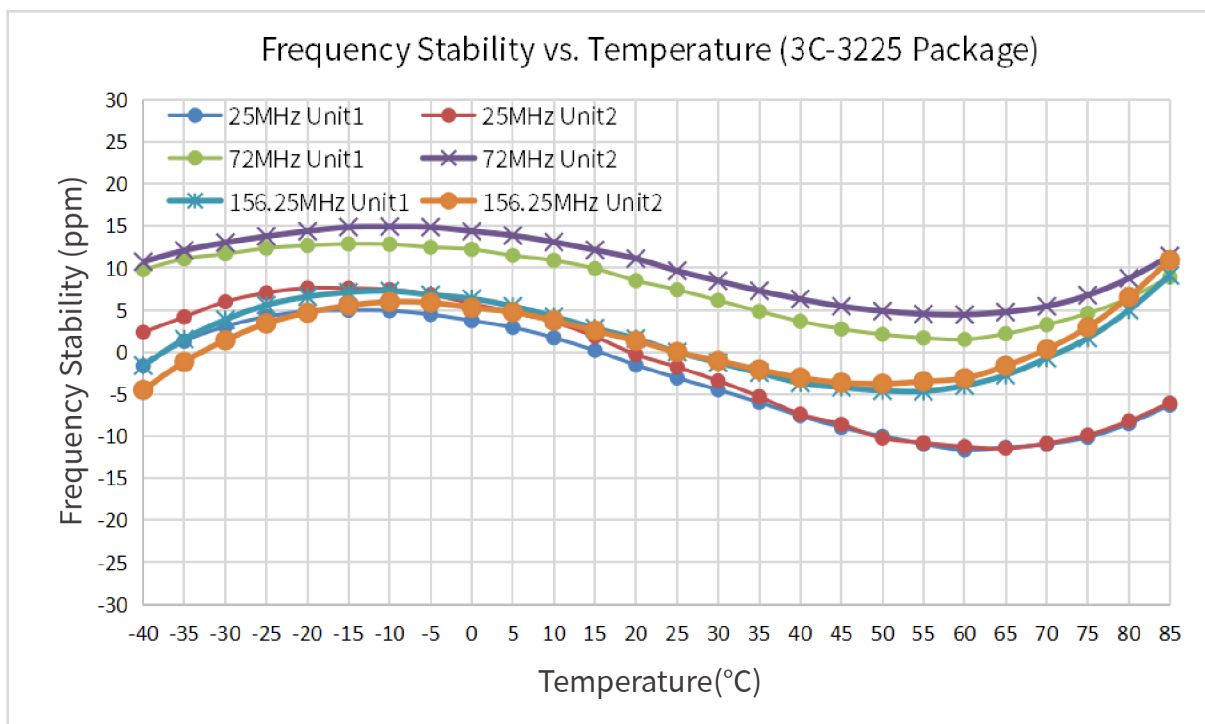
若需要更详细的资料请查询详细规格书或和我们的技术人员联系。

1. 选择需要的封装规格及产品系列: 2.0×1.6mm; 1C Series
2. 选择需要的频率: 8.000MHz
3. 选择需要的工作电压: 3.3V
4. 选择需要的频率稳定度 (@+25°C): ±10ppm
5. 选择需要的工作温度范围: -40°C ~ +85°C
6. 选择需要的频率&温度特性: ±30ppm

您需要的产品是: 1C Series 8.000MHz 3.3V ±10ppm@25°C ±30ppm@ -40°C~+85°C

## 频率温度特性曲线

### Frequency Temperature Characteristics





# 零部件编码示意

Options and Part Identification

## Options and Part Identification : Example SX3M1.000B10F20TNN

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

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

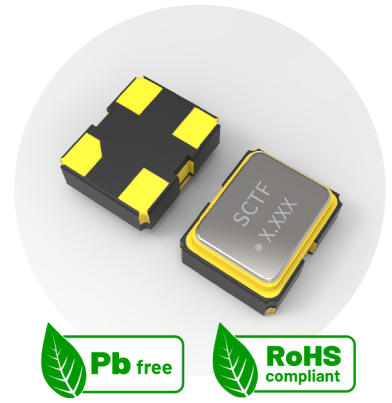
# 1C Series 2.0 x 1.6 mm SMD Crystal Oscillator

## Feature

- Ultra Miniature Ceramic surface mount with Metal Lid
- CMOS compatible logic levels
- Tri-state function available
- Supply voltage range : 1.62V ~ 3.63V(Compatible with 1.8V, 2.5V, 3.3V)
- 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		54.000	MHz	
Operating Temperature	T <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3	3.63	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			10	mA	1MHz ≤ Freq. < 40MHz
				20		40MHz ≤ Freq. ≤ 54MHz
Duty Cycle	SYM	45		55	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			5	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

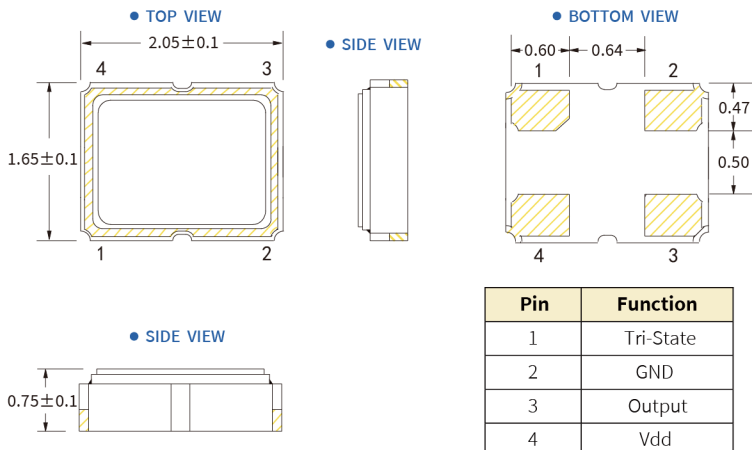
## Frequency Stability & Operating Temperature Range

Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C	△	★	★	★	★
-40°C to +85°C		△	★	★	★

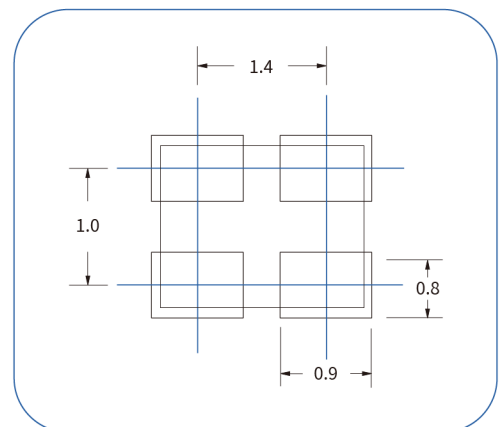
★: Available    △: Conditional

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

## Dimensions (UNIT:mm)



## Solder pad layout (UNIT:mm)



# 2C Series 2.5 x 2.0 mm SMD Crystal Oscillator

## Feature

- Ultra Miniature Ceramic surface mount with Metal Lid
- CMOS compatible logic levels
- Tri-state function available
- Supply voltage range : 1.62V ~ 3.63V(Compatible with 1.8V, 2.5V, 3.3V)
- 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		54.000	MHz	
Operating Temperature	T <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3	3.63	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			10	mA	1MHz ≤ Freq. < 40MHz
				20		40MHz ≤ Freq. ≤ 54MHz
Duty Cycle	SYM	45		55	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			5	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

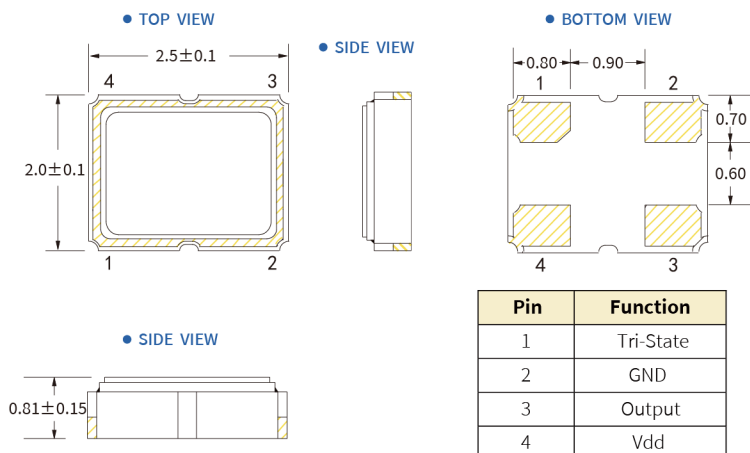
## Frequency Stability & Operating Temperature Range

Temp.	FT			
	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C	△	★	★	★
-40°C to +85°C		△	★	★

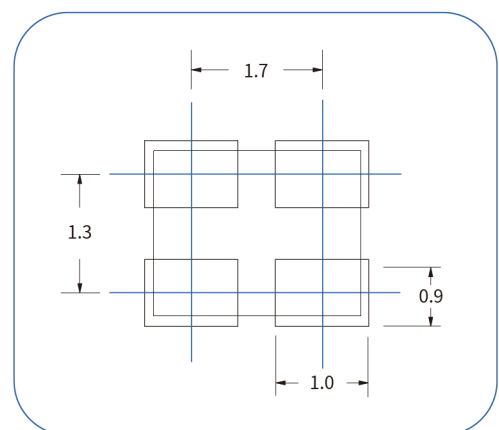
★: Available    △: Conditional

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

## Dimensions (UNIT:mm)



## Solder pad layout (UNIT:mm)



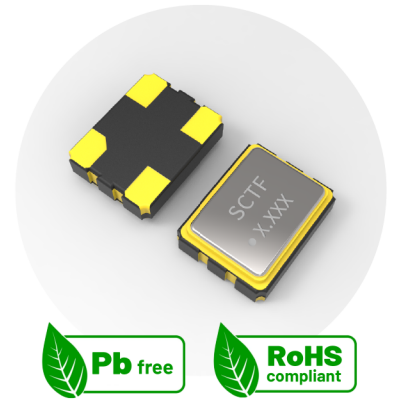
# 3C Series 3.2 x 2.5 mm SMD Crystal Oscillator

## Feature

- Miniature Ceramic surface mount with Metal Lid
- 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		160.000	MHz	
Operating Temperature	T <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3/5.0	5.5	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			10	mA	1MHz ≤ Freq. < 40MHz
				20		40MHz ≤ Freq. < 80MHz
				40		80MHz ≤ Freq. < 160MHz
Duty Cycle	SYM	45		55	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			5	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

## Frequency Stability & Operating Temperature Range

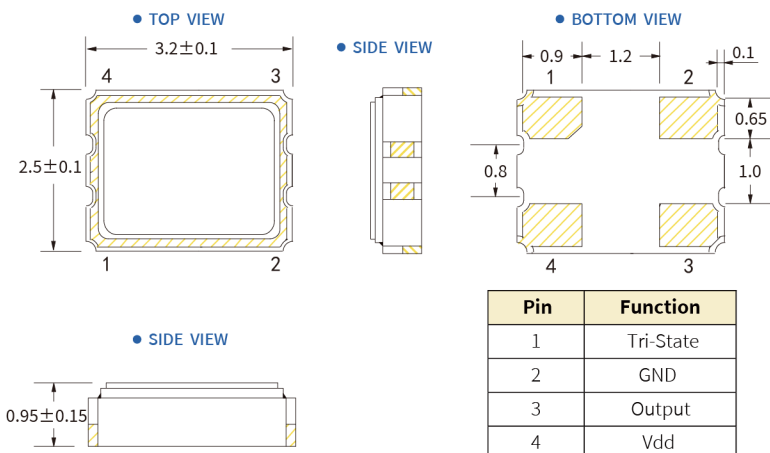
Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C		△	★	★	★
-40°C to +85°C			△	★	★

★: Available    △: Conditional

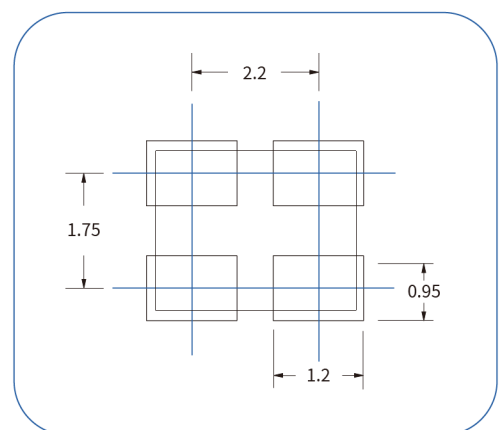
All condition: Include 25°C tolerance, operating temperature range, input voltage change, aging, load change.

★: Available    △: Conditional

## Dimensions (UNIT:mm)



## Solder pad layout (UNIT:mm)





# 5C Series

## 5.0 x 3.2 mm SMD Crystal Oscillator

### Feature

- Ceramic surface mount with Metal Lid
- 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		160.000	MHz	
Operating Temperature	T <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3/5.0	5.5	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			10	mA	1MHz ≤ Freq. < 40MHz
				20		40MHz ≤ Freq. < 80MHz
				40		80MHz ≤ Freq. < 160MHz
Duty Cycle	SYM	45		55	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			5	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

### Frequency Stability & Operating Temperature Range

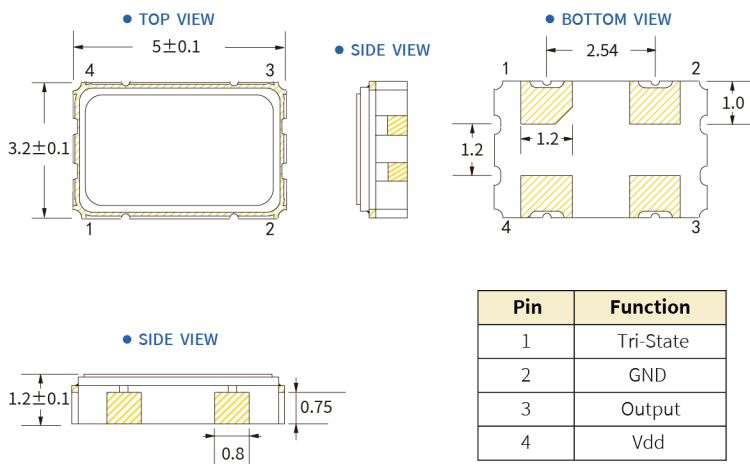
Temp.	FT			
	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C	△	★	★	★
-40°C to +85°C		△	★	★

★: Available    △: Conditional

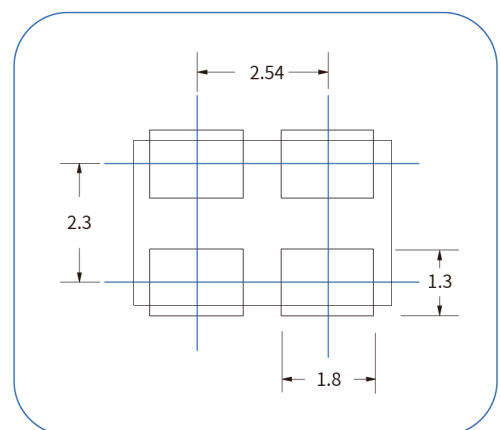
All condition: Include 25°C tolerance, operating temperature range , input voltage change, aging, load change.

★: Available    △: Conditional

### Dimensions (UNIT:mm)



### Solder pad layout (UNIT:mm)



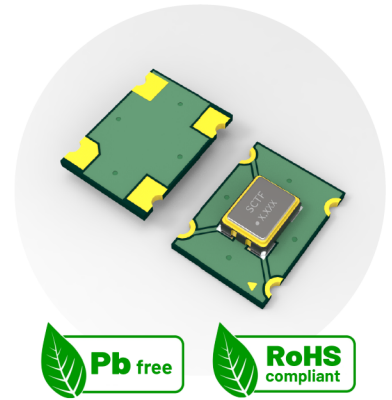
# 5CP Series 5.0 x 3.2 mm SMD Crystal Oscillator

## Feature

- Cost-effective design
- 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		160.000	MHz	
Operating Temperature	T <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3/5.0	5.5	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			10	mA	1MHz ≤ Freq. < 40MHz
				20		40MHz ≤ Freq. < 80MHz
				40		80MHz ≤ Freq. < 160MHz
Duty Cycle	SYM	45		55	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			5	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

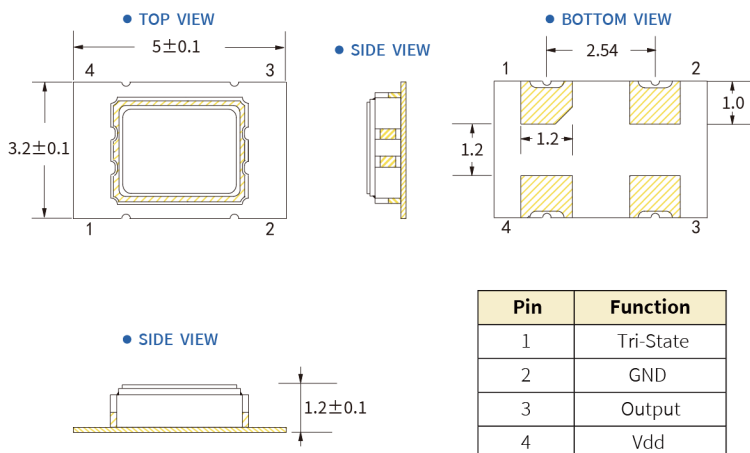
## Frequency Stability & Operating Temperature Range

Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C		△	★	★	★
-40°C to +85°C			△	★	★

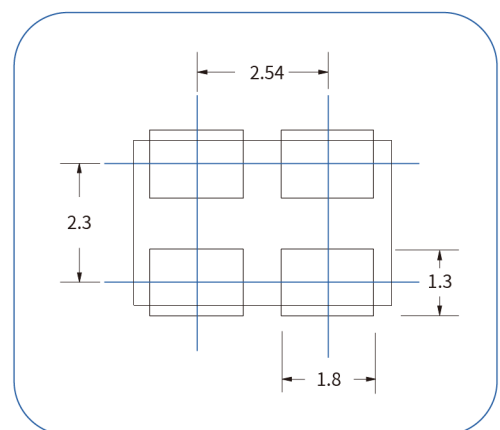
★: Available    △: Conditional

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

## Dimensions (UNIT:mm)



## Solder pad layout (UNIT:mm)



# 7C Series

## 7.0 x 5.0 mm SMD Crystal Oscillator

### Feature

- Cost-effective design
- 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

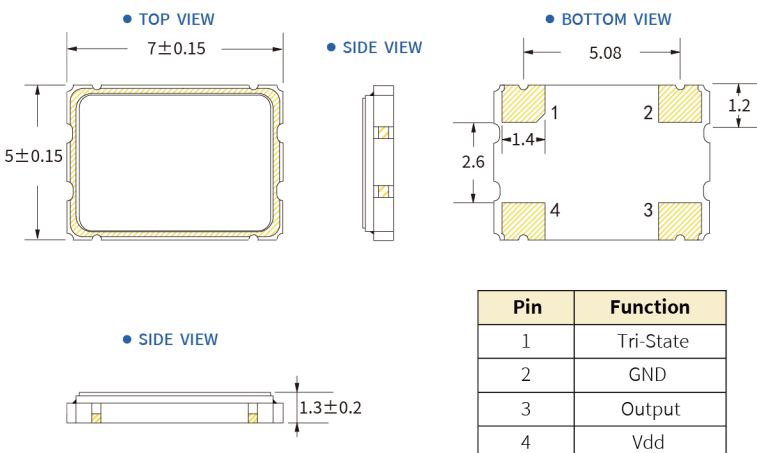
Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.	1.000		160.000	MHz	
Operating Temperature	T <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3/5.0	5.5	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			10	mA	1MHz ≤ Freq. < 40MHz
				20		40MHz ≤ Freq. < 80MHz
				40		80MHz ≤ Freq. < 160MHz
Duty Cycle	SYM	45		55	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			5	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

### Frequency Stability & Operating Temperature Range

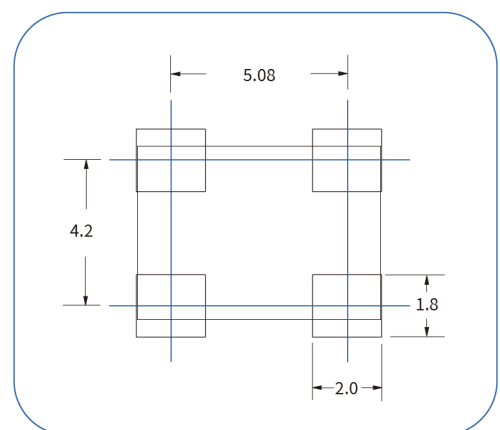
Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
		-20°C to +70°C	△	★	★
-40°C to +85°C		△	★	★	

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

### Dimensions (UNIT:mm)



### Solder pad layout (UNIT:mm)



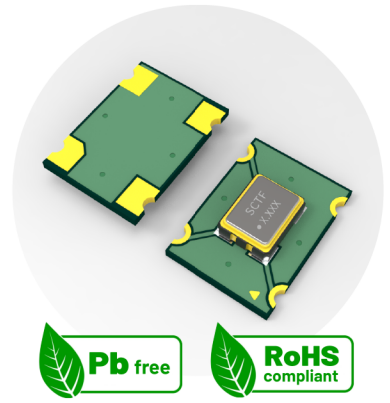
# 7CP Series 7.0 x 5.0 mm SMD Crystal Oscillator

## Feature

- Cost-effective design
- 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		160.000	MHz	
Operating Temperature	T <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3/5.0	5.5	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			10	mA	1MHz ≤ Freq. < 40MHz
				20		40MHz ≤ Freq. < 80MHz
				40		80MHz ≤ Freq. < 160MHz
Duty Cycle	SYM	45		55	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			5	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

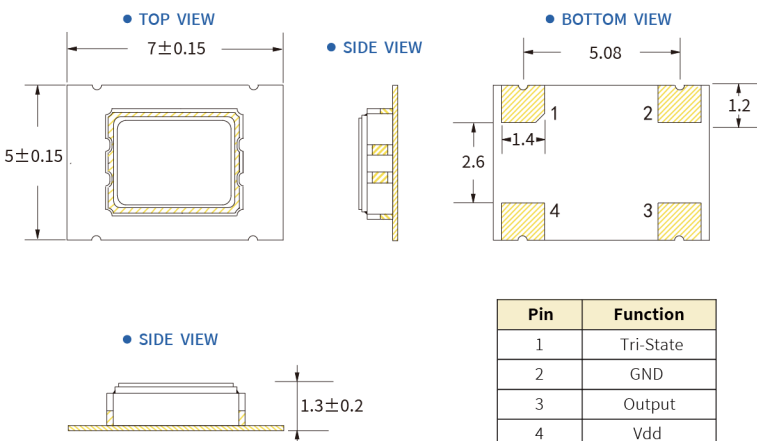
## Frequency Stability & Operating Temperature Range

Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C		△	★	★	★
-40°C to +85°C			△	★	★

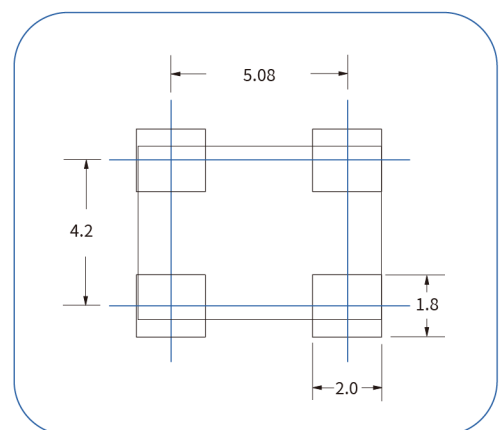
★: Available    △: Conditional

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

## Dimensions (UNIT:mm)



## Solder pad layout (UNIT:mm)





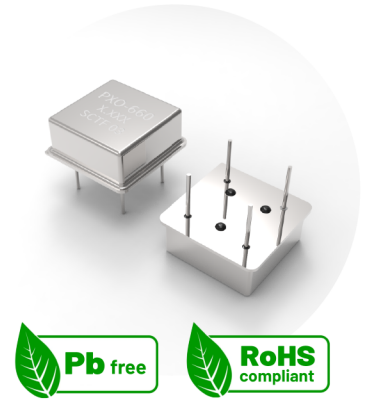
# OA Series HALF SIZE Crystal Oscillator

## 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

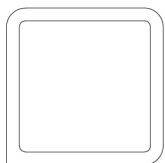
Temp.	FT	±30ppm	±50ppm
	-20°C to +70°C	★	★
-40°C to +85°C	△	△	★

★: Available    △: Conditional

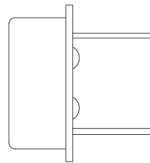
All condition: Include 25°C tolerance, operating temperature range , input voltage change , aging, load change.

## Dimensions (UNIT:mm)

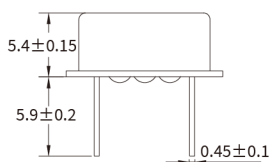
• TOP VIEW



• SIDE VIEW

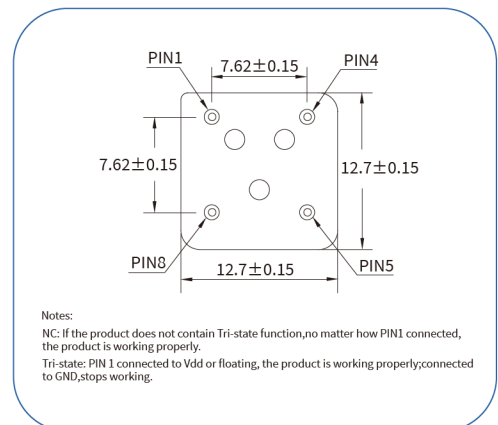


• SIDE VIEW



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

## Solder pad layout (UNIT:mm)



# OB Series FULL SIZE Crystal Oscillator

## 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 <sub>use</sub>	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T <sub>stg</sub>	-55		+125	°C	
Supply Voltage	V <sub>dd</sub>	1.62	1.8/2.5/3.3/5.0	5.5	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Current Consumption	I <sub>cc</sub>			25	mA	1MHz ≤ Freq. < 40MHz
				60		40MHz ≤ Freq. < 80MHz
				80		80MHz ≤ Freq. < 160MHz
Duty Cycle	SYM	40		60	%	50 % V <sub>dd</sub> level, L <sub>CMOS</sub> ≤ 15 pF
Rise / Fall Time	T <sub>R</sub> / T <sub>F</sub>			5	nS	10% V <sub>dd</sub> to 90% Level
Start-up Time	T <sub>str</sub>			10	mS	To 90% of Final Amplitude
High output voltage	V <sub>OH</sub>	0.9V <sub>dd</sub>			V	
Low output voltage	V <sub>OL</sub>			0.1V <sub>dd</sub>	V	
Enable Voltage High (Logic 1)	V <sub>IH</sub>	0.7V <sub>dd</sub>			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>			0.3V <sub>dd</sub>	V	
Aging	f <sub>age</sub>			3	ppm	1st. Year at 25°C

## Frequency Stability & Operating Temperature Range

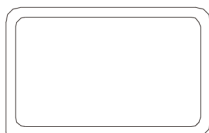
Temp.	FT	±30ppm	±50ppm
	-20°C to +70°C	★	★
-40°C to +85°C	△		★

★: Available    △: Conditional

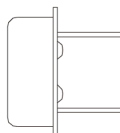
All condition: Include 25°C tolerance, operating temperature range , input voltage change, aging, load change.

## Dimensions (UNIT:mm)

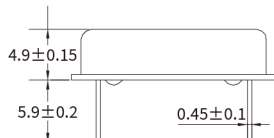
• TOP VIEW



• SIDE VIEW

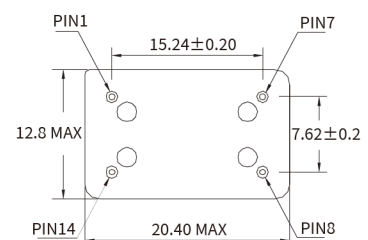


• SIDE VIEW



PIN	FUNCTION
1	NC/Tri-State
4	GND
5	Output
8	V <sub>dd</sub>

## 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 V<sub>dd</sub> or floating, the product is working properly; connected to GND, stops working.