

# 5X Series 5.0 x 3.2 mm SMD Crystal

5 : 5.0×3.2×0.8 mm | SMD5032-4P

X : Crystal Resonator

## Feature

- AT-cut Crystal Construction
- Miniature Ceramic surface mount with Metal Lid
- High temperature, high precision and reliability Characteristics
- Package Size: 5.0 x 3.2 x 0.8mm
- Pb-free and RoHS/Green compliant

## Applications

- Industrial applications
- Portable devices
- Short-range Wireless module
- Computers, Modems, Microprocessors



## Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.	8.000		50.000	MHz	
Oscillation Mode		Fundamental (AT-cut)				
Frequency Tolerance	$\Delta f/f$			$\pm 10$	ppm	at 25°C $\pm 2^\circ\text{C}$
Operating Temperature	T_use	-20		70	°C	
		-40		85	°C	
Storage Temperature Range	T_sta	-55		125	°C	
Shunt Capacitance	C0			5	pF	
Drive Level	DL		10	300	$\mu\text{W}$	
Load Capacitance	CL	8		20	pF	
Insulation Resistance	IR			500	M $\Omega$	at DC 100V
Aging	f_age			3	ppm	1st. Year at 25°C

## Frequency Stability & Operating Temperature Range

Temp. \ FT	$\pm 10\text{ppm}$	$\pm 15\text{ppm}$	$\pm 20\text{ppm}$	$\pm 30\text{ppm}$
-20°C to +70°C	$\Delta$	★	★	★
-40°C to +85°C		$\Delta$	★	★

★: Available     $\Delta$ : Conditional

## Equivalent Series Resistance

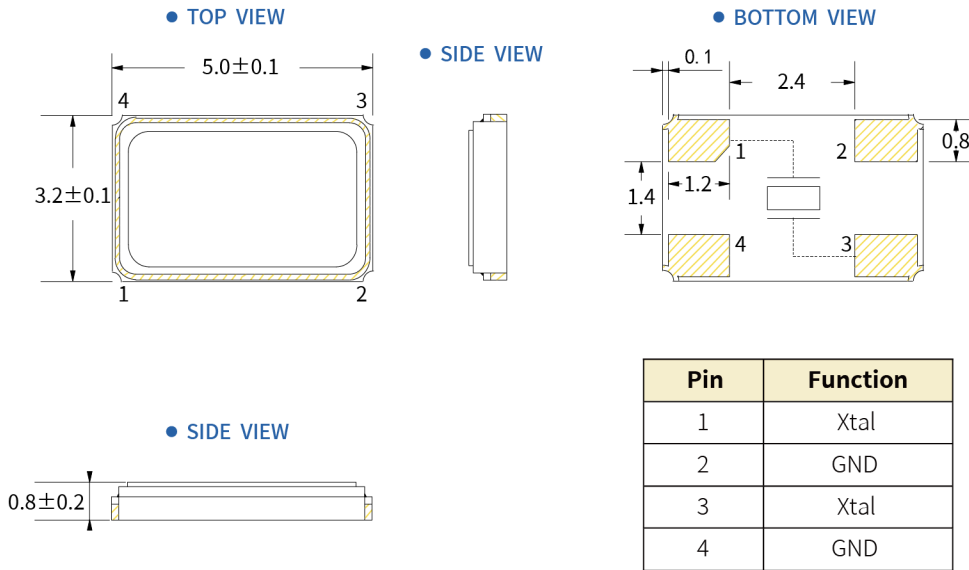
Frequency Range	ESR(Max.)
8MHz $\leq$ Freq. < 10MHz	100 $\Omega$
10MHz $\leq$ Freq. < 16MHz	80 $\Omega$
16MHz $\leq$ Freq. < 20MHz	50 $\Omega$
20MHz $\leq$ Freq. < 24MHz	40 $\Omega$
24MHz $\leq$ Freq. $\leq$ 50MHz	30 $\Omega$

# 5X Series 5.0 x 3.2 mm SMD Crystal

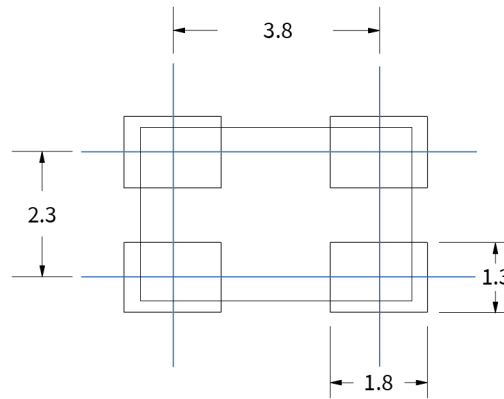
5 : 5.0×3.2×0.8 mm | SMD5032-4P

X : Crystal Resonator

## Dimensions (UNIT:mm)



## Solder pad layout (UNIT:mm)



## Options and Part Identification : Example SX5B8.000F1010F30

Company	Ceramic Package	Frequency Code [MHz]	Vibration Mode	Load Capacitance	Frequency Tolerance	Operating Temperature	Frequency Drift
<b>SX</b>	<b>5B</b>	<b>X.XXX</b>	<b>F</b>	<b>10</b>	<b>10</b>	<b>F</b>	<b>30</b>
Code Company	Code Ceramic Package	Frequency	Code Vibration Mode	Code Load Capacitance	Code Frequency Tolerance	Code Operating Temperature	Code Frequency Drift
SX SCTF	0B 1.6 x 1.2 x 0.35mm [4PAD] 1B 2.0 x 1.6 x 0.45mm [4PAD] 2B 2.5 x 2.0 x 0.55mm [4PAD] 3B 3.2 x 2.5 x 0.7mm [4PAD] 5B 5.0 x 3.2 x 0.8mm [4PAD] 5A 5.0 x 3.2 x 0.8mm [2PAD] 7B 7.0 x 5.0 x 1.0mm [4PAD]	8.000	F AT - Fundamental	S Please specify CL in pF or S for series 06 6pF 08 8pF 10 10pF 12 12pF 20 20pF	10 ±10ppm 20 ±20ppm	E -20°C ~ +70°C F -40°C ~ +85°C	10 ±10ppm 15 ±15ppm 20 ±20ppm 30 ±30ppm

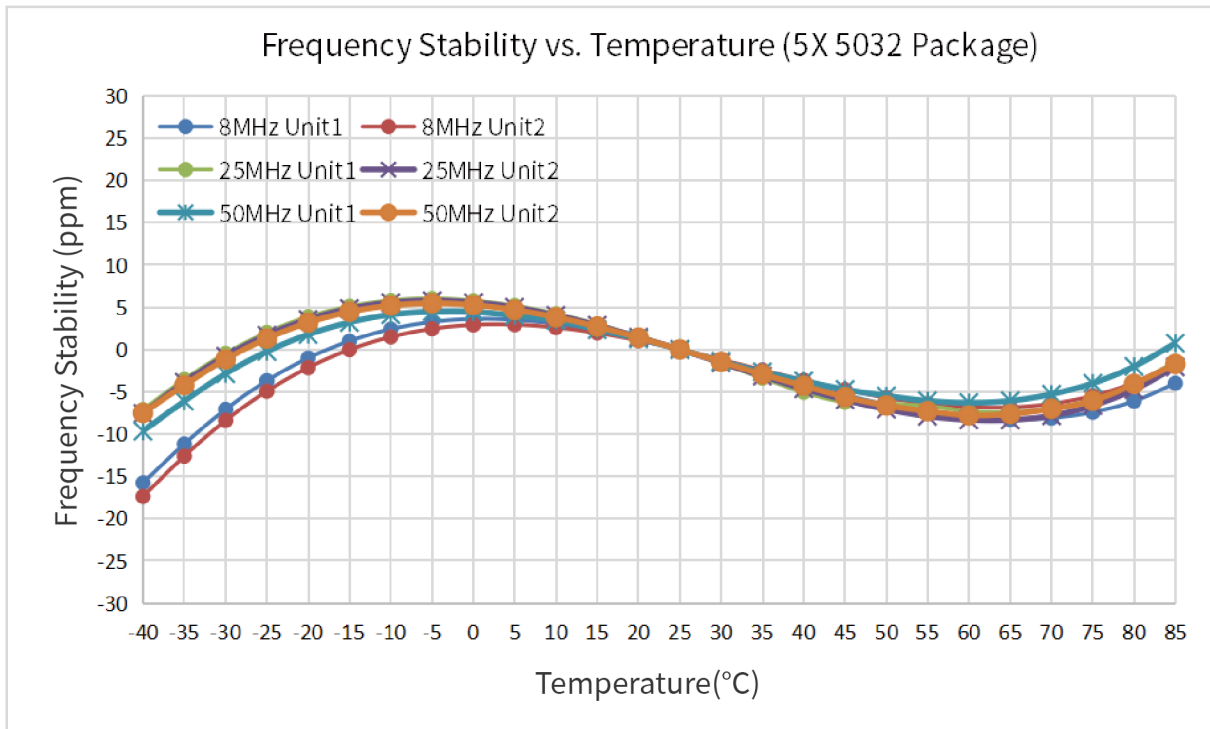
If you have other parameter requirements, you can contact **SCTF** at any time.

# 5X Series 5.0 x 3.2 mm SMD Crystal

5 : 5.0×3.2×0.8 mm | SMD5032-4P

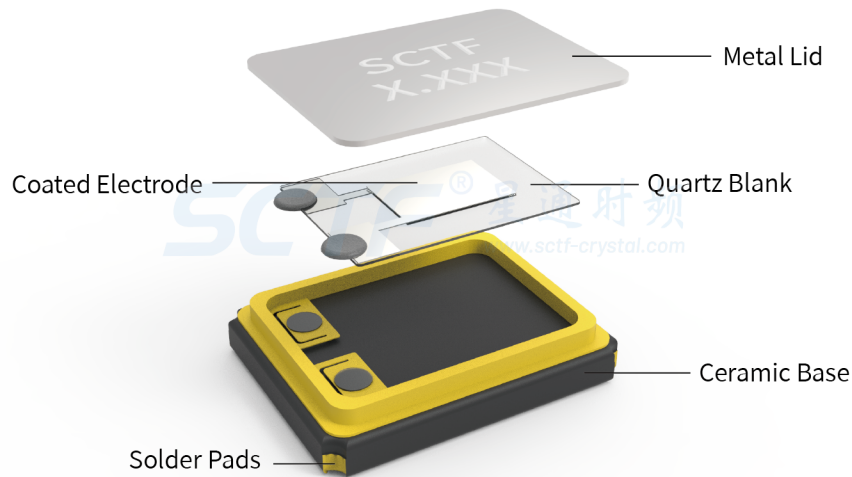
X : Crystal Resonator

## Frequency Temperature Characteristics

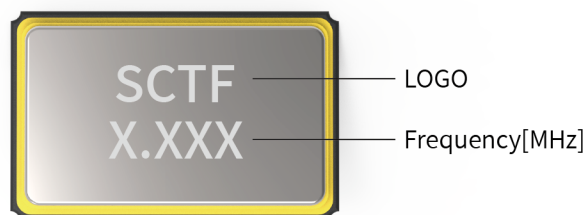


## Product Structure & Marking Information

### Product Structure



### Marking Information

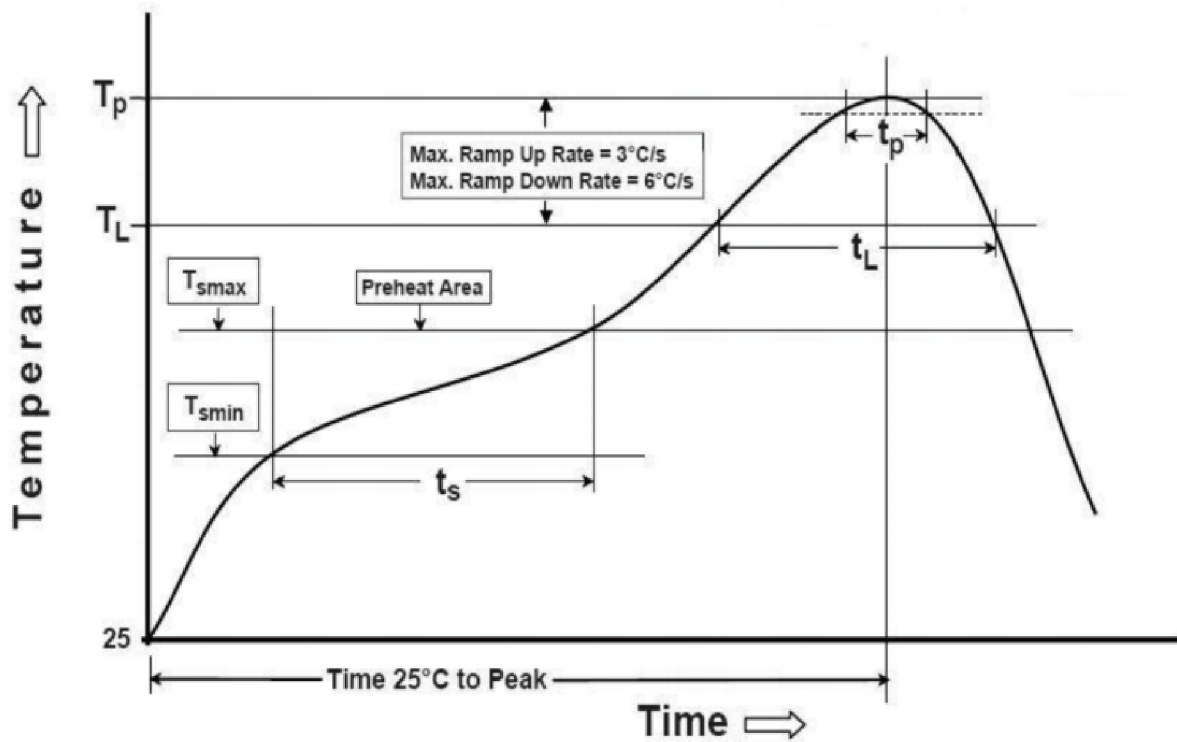


# 5X Series 5.0 x 3.2 mm SMD Crystal

5 : 5.0×3.2×0.8 mm | SMD5032-4P

X : Crystal Resonator

## Suggested Reflow Profile



Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak <ul style="list-style-type: none"> <li>● Temperature Min ( T<sub>s</sub> min )</li> <li>● Temperature Max ( T<sub>s</sub> max )</li> <li>● Time ( T<sub>s</sub> min to T<sub>s</sub> max )</li> </ul>	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate ( T <sub>L</sub> to T <sub>p</sub> )	3°C/ second max.	3°C/ second max.
Time maintained above <ul style="list-style-type: none"> <li>● Liquidous temperature ( T<sub>L</sub> )</li> <li>● Time ( t<sub>L</sub> ) maintained above T<sub>L</sub></li> </ul>	183°C 60-150 seconds	217°C 60-150 seconds
Peak package body temperature ( T <sub>p</sub> )	235°C	260°C
Time within 5° C of the specified classification temperature ( T <sub>p</sub> )	20 seconds	30 seconds
Ramp - down rate ( T <sub>p</sub> to T <sub>L</sub> )	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>	

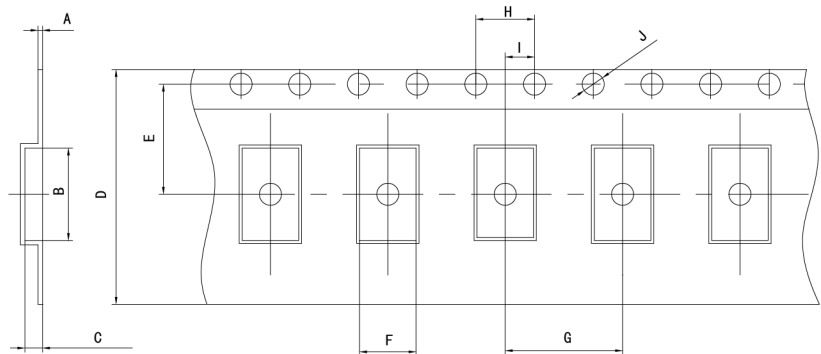
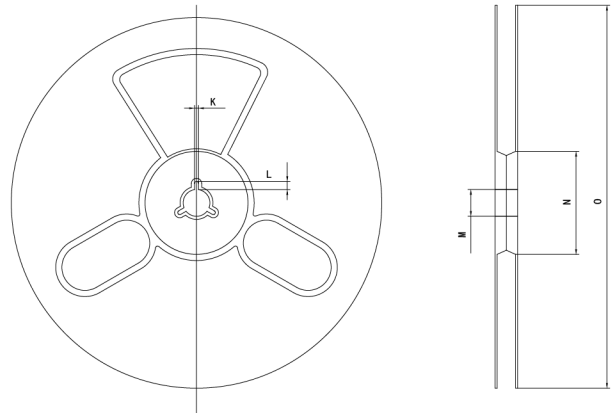
# 5X Series 5.0 x 3.2 mm SMD Crystal

5 : 5.0×3.2×0.8 mm | SMD5032-4P

X : Crystal Resonator

## Packaging Information

T=Tape and reel (1,000pcs/reel)



### Pocket Tape Dimensions(mm)

Series	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5X	0.3±0.05	5.4±0.1	1.2±0.1	12±0.3	5.5±0.1	3.6±0.1	8.0±0.1	4.0±0.1	2.0±0.1	φ1.5±0.1	2.0±0.2	4.0±1.0	φ13±0.5	φ60±1	φ180±1

## Common Frequencies – MHz

5X Series				
8.000	8.192	10.000	11.0592	11.2896
12.000	12.288	13.000	13.560	14.31818
14.7456	16.000	16.384	18.432	19.6608
20.000	22.1184	24.000	24.576	25.000
26.000	27.000	27.120	28.63636	30.000
32.000	40.000	48.000	50.000	