

A5X Series5.0 x 3.2 mm SMD Automotive Crystal Resonator

A : Automotive5 : 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
- Pb-free and RoHS/Green compliant
- AEC-Q200 Qualified

Applications

- Industrial Control & Automation
- ADAS
- LiDAR (Light Detection and Ranging)
- Power Control & Conversion



Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.	8.000		50.000	MHz	
Oscillation Mode		Fundamental (AT-cut)				
Frequency Tolerance	$\Delta f/f$			± 10	ppm	at 25°C±2°C
Operating Temperature	T _{use}	-40		85	°C	
		-40		105	°C	
		-40		125	°C	
StorageTemperature Range	T _{sta}	-55		125	°C	
Shunt Capacitance	C ₀			5	pF	
Drive Level	DL		10	300	μW	
Load Capacitance	CL	8		20	pF	
Insulation Resistance	IR			500	MΩ	at DC 100V
Aging	f _{age}			3	ppm	1st. Year at 25°C

Frequency Stability & Operating Temperature Range

Temp. \ FT	±15ppm	±20ppm	±30ppm	±50ppm
-40°C to +85°C	△	★	★	★
-40°C to +105°C		△	★	★
-40°C to +125°C			△	★

★: Available △: Conditional

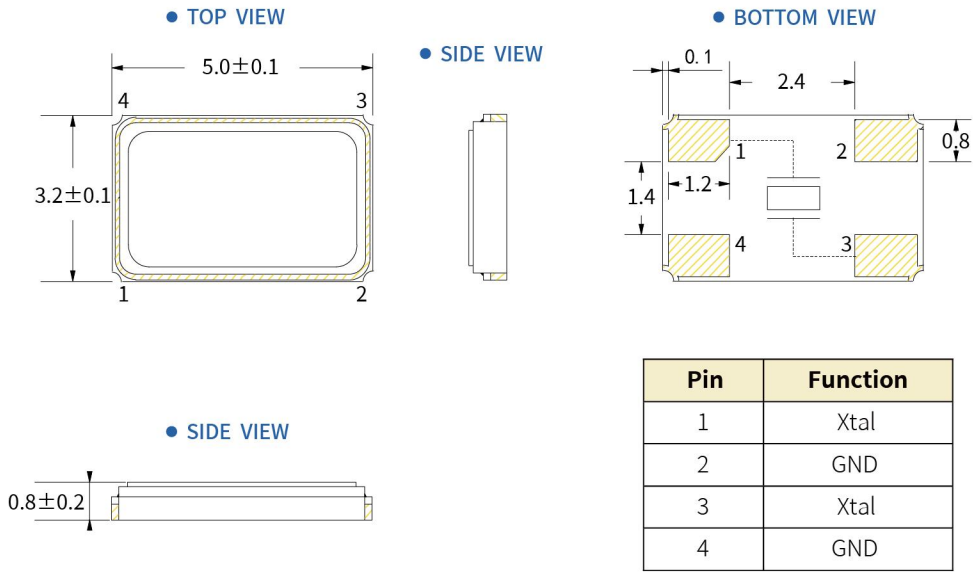
Equivalent Series Resistance

Frequency Range	ESR(Max.)
8MHz≤ Freq. <10MHz	100 Ω
10MHz≤ Freq. <16MHz	80 Ω
16MHz≤ Freq. <20MHz	50 Ω
20MHz≤ Freq. <24MHz	40 Ω
24MHz≤ Freq. ≤50MHz	30 Ω

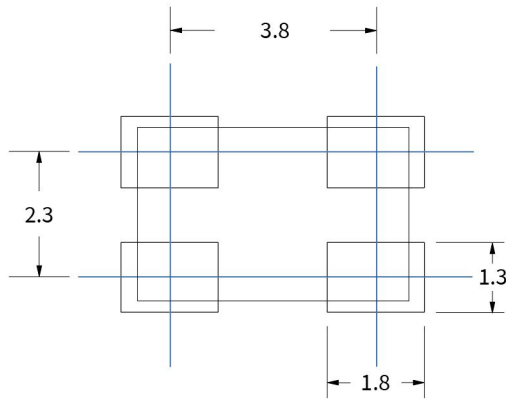
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Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)



Options and Part Identification : Example SXA5B8.000F1010G30

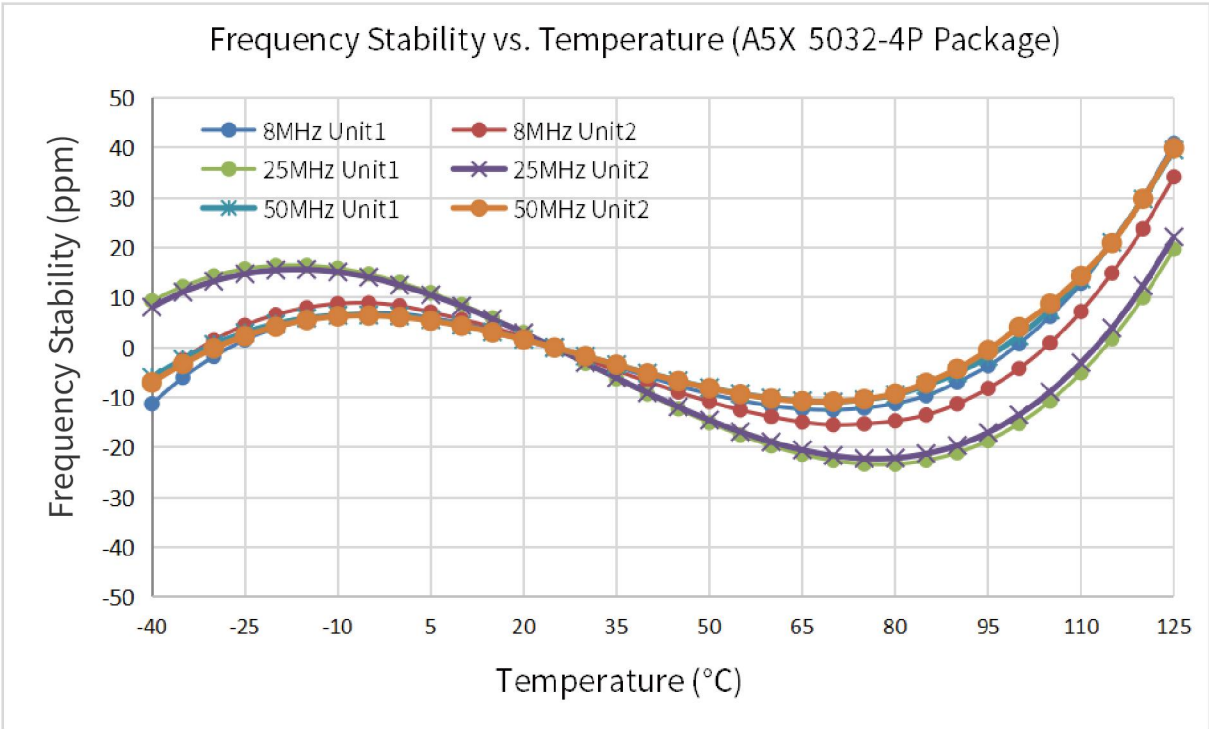
Company	Ratings	Ceramic Package	Frequency Code [MHz]	Vibration Mode	Load Capacitance	Frequency Tolerance	Operating Temperature	Frequency Drift
SX	A	5B	X.XXX	F	10	10	G	30
Code Company	Code Ratings	Code Ceramic Package	Frequency	Code Vibration Mode	Code Load Capacitance	Code Frequency Tolerance	Code Operating Temperature	Code Frequency Drift
SX SCTF	Blank Standard	0B 1.6 x 1.2 x 0.35mm [4PAD]	8.000	F AT - Fundamental	S Please specify CL in pF or S for series	10 ±10ppm	F -40°C ~ +85°C	15 ±15ppm
	A AEC-Q100, AEC-Q200	1B 2.0 x 1.6 x 0.45mm [4PAD]			06 6pF	20 ±20ppm	G -40°C ~ +105°C	20 ±20ppm
		2B 2.5 x 2.0 x 0.55mm [4PAD]			08 8pF		M -40°C ~ +125°C	30 ±30ppm
		3B 3.2 x 2.5 x 0.7mm [4PAD]			10 10pF			50 ±50ppm
		5B 5.0 x 3.2 x 0.8mm [4PAD]			12 12pF			
		5A 5.0 x 3.2 x 0.8mm [2PAD]			20 20pF			

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

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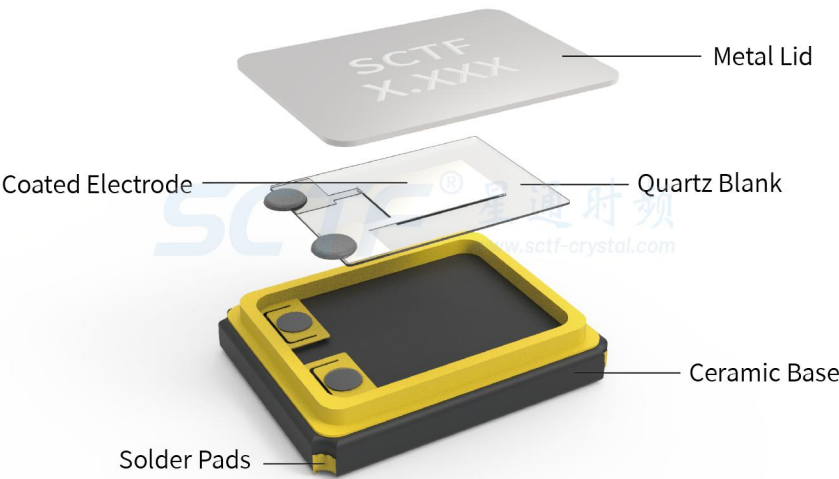
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Frequency Temperature Characteristics

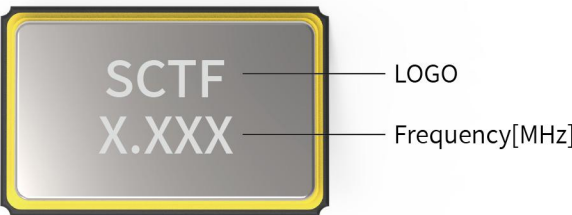


Product Structure&Marking Information

Product Structure



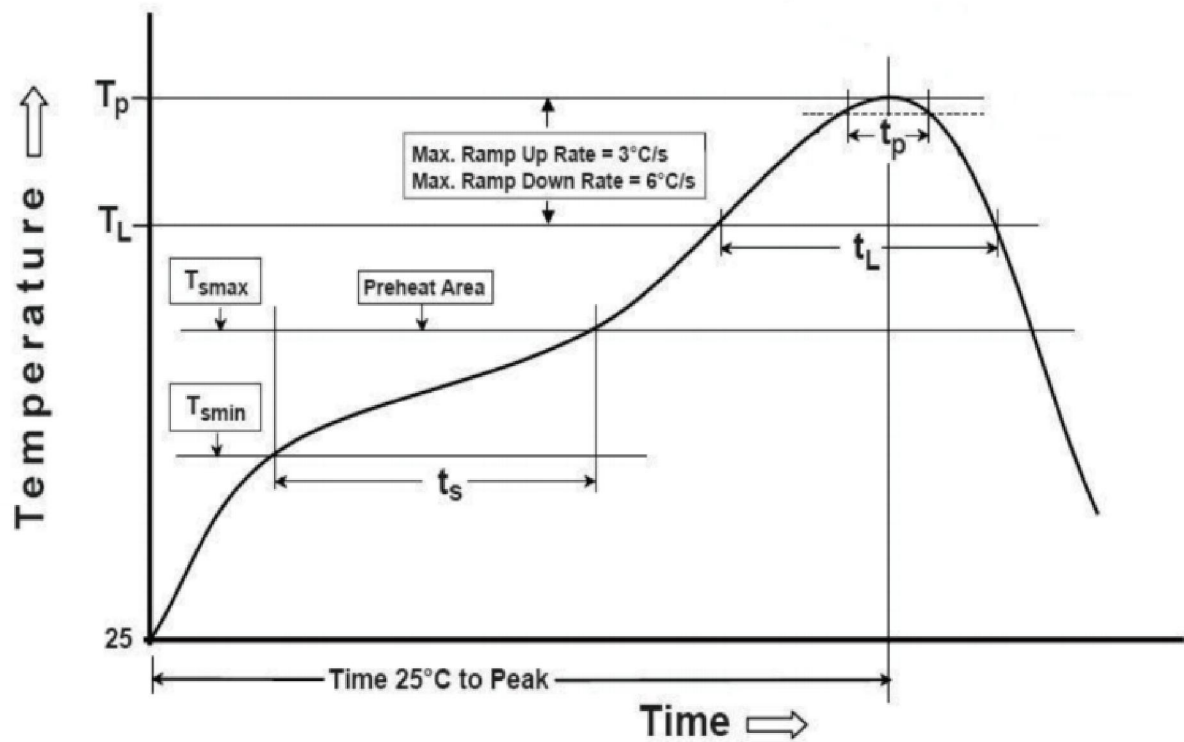
Marking Information



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Suggested Reflow Profile



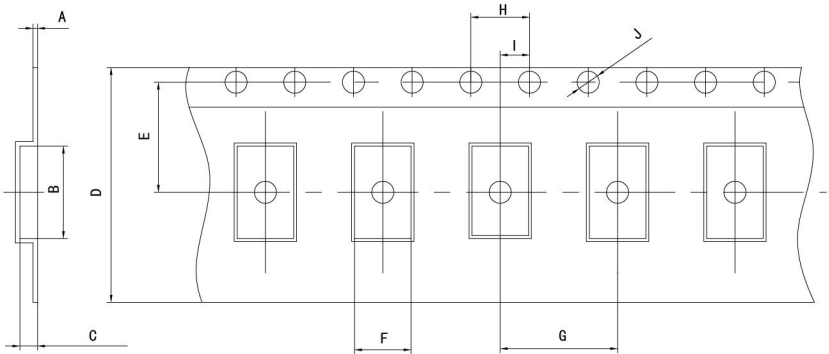
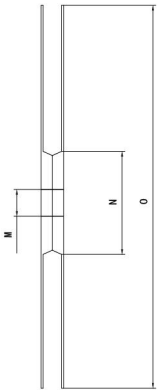
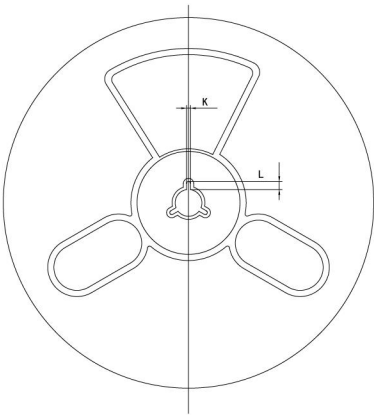
Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak ● Temperature Min (Ts min) ● Temperature Max (Ts max) ● Time (Ts min to Ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate (TL to Tp)	3°C/ second max.	3°C/ second max.
Time maintained above ● Liquidous temperature (TL) ● Time (tL) maintained above TL	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.
Suggest reflow times	2 Times max.	

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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
A5X	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

A5X 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	