

2X Series 2.5 x 2.0 mm SMD Crystal

2 : 2.5×2.0×0.55 mm | SMD2520-4P X : Crystal Resonator

Feature

- AT-cut Crystal Construction
- Ultra miniature Ceramic surface mount with Metal Lid
- High temperature, high precision and reliability Characteristics
- Package Size:2.5 x 2.0 x 0.55mm
- 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.	12.000		54.000	MHz	
Oscillation Mode		Fundamental (AT-cut)				
Frequency Tolerance	$\Delta f/f$			± 10	ppm	at 25°C±2°C
Operating Temperature	T _{use}	-20		70	°C	
		-40		85	°C	
StorageTemperature Range	T _{sta}	-55		125	°C	
Shunt Capacitance	C0			3	pF	
Drive Level	DL		10	100	μW	
Load Capacitance	CL	6		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	±10ppm	±15ppm	±20ppm	±30ppm
-20°C to +70°C	△	★	★	★
-40°C to +85°C		△	★	★

★: Available △: Conditional

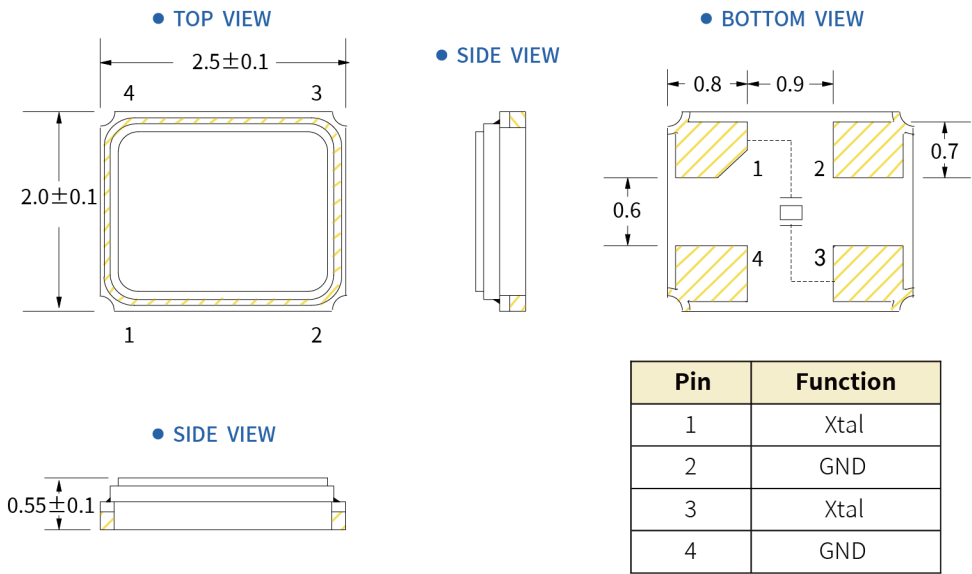
Equivalent Series Resistance

Frequency Range	ESR(Max.)
12MHz≤ Freq. <16MHz	200 Ω
16MHz≤ Freq. <20MHz	80 Ω
20MHz≤ Freq. <30MHz	60 Ω
30MHz≤ Freq. <35MHz	50 Ω
35MHz≤ Freq. ≤54MHz	40 Ω

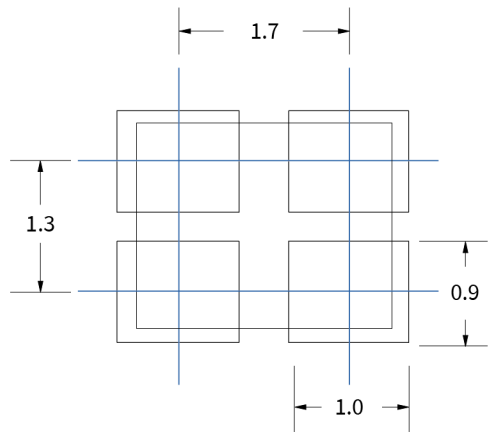
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Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)



Options and Part Identification : Example SX2B12.000F1010F30

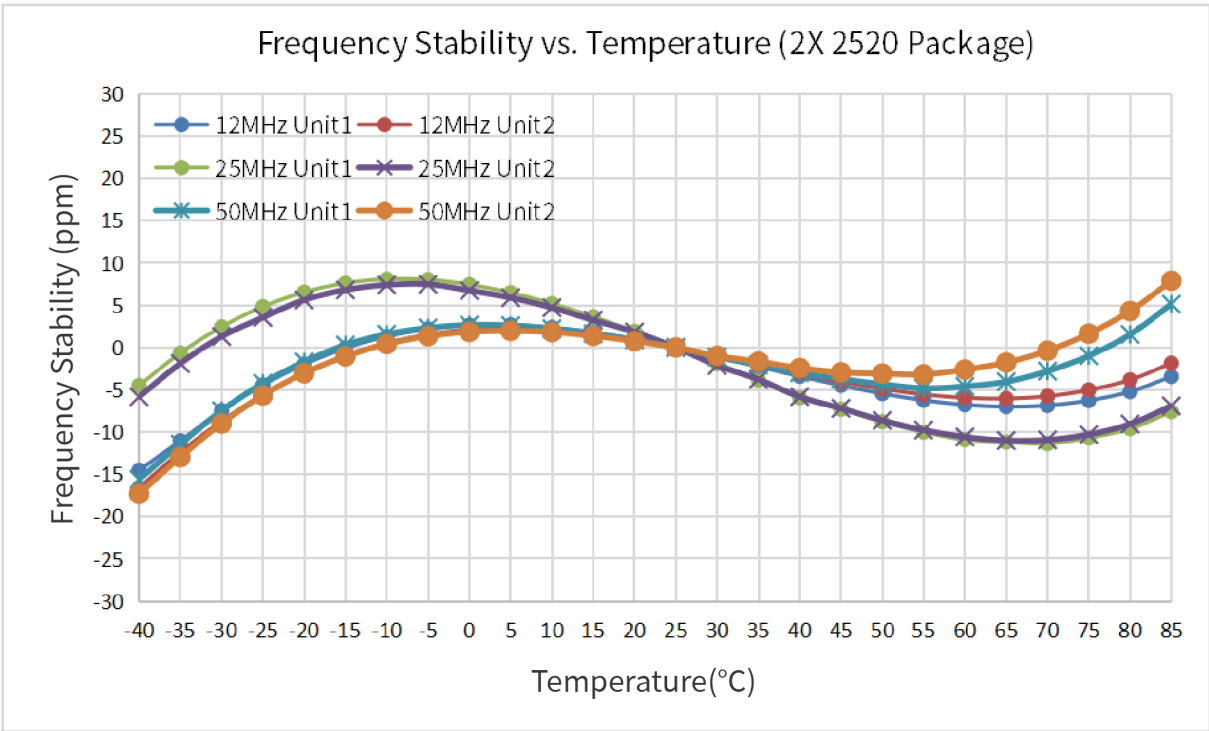
Company	Ceramic Package	Frequency Code [MHZ]	Vibration Mode	Load Capacitance	Frequency Tolerance	Operating Temperature	Frequency Drift	
SX	2B	X.XXX	F	10	10	F	30	
		Frequency						
Code	Company	12.000	Code	Vibration Mode	Code	Frequency Tolerance	Code	Frequency Drift
SX	SCTF		F	AT - Fundamental	10	±10ppm	10	±10ppm
					20	±20ppm	15	±15ppm
							20	±20ppm
							30	±30ppm
				Code	Load Capacitance			
				S	Please specify CL in pF or S for series	Code	Operating Temperature	
				06	6pF	E	-20°C ~ +70°C	
				08	8pF	F	-40°C ~ +85°C	
				10	10pF			
				12	12pF			
				20	20pF			

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

2X Series 2.5 x 2.0 mm SMD Crystal

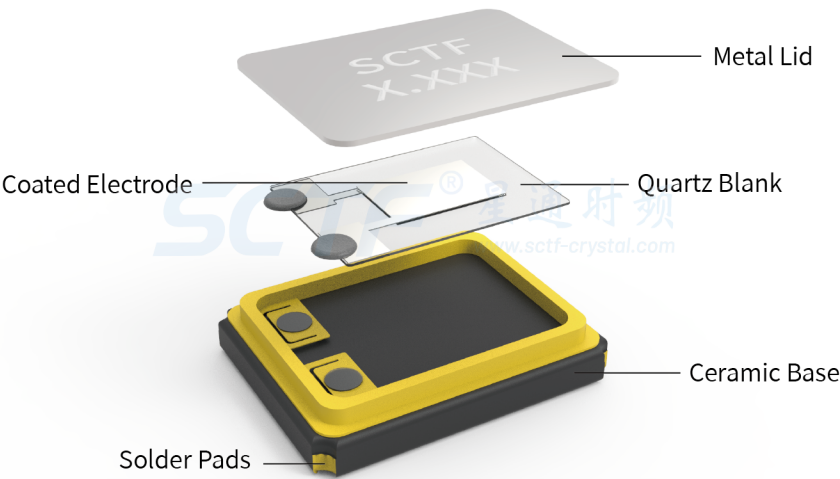
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Frequency Temperature Characteristics

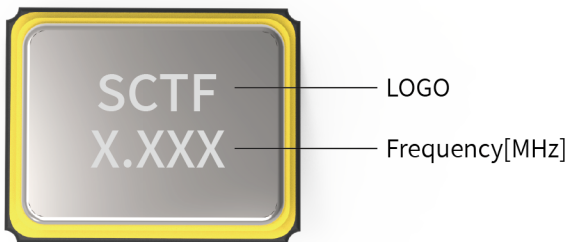


Product Structure&Marking Information

Product Structure



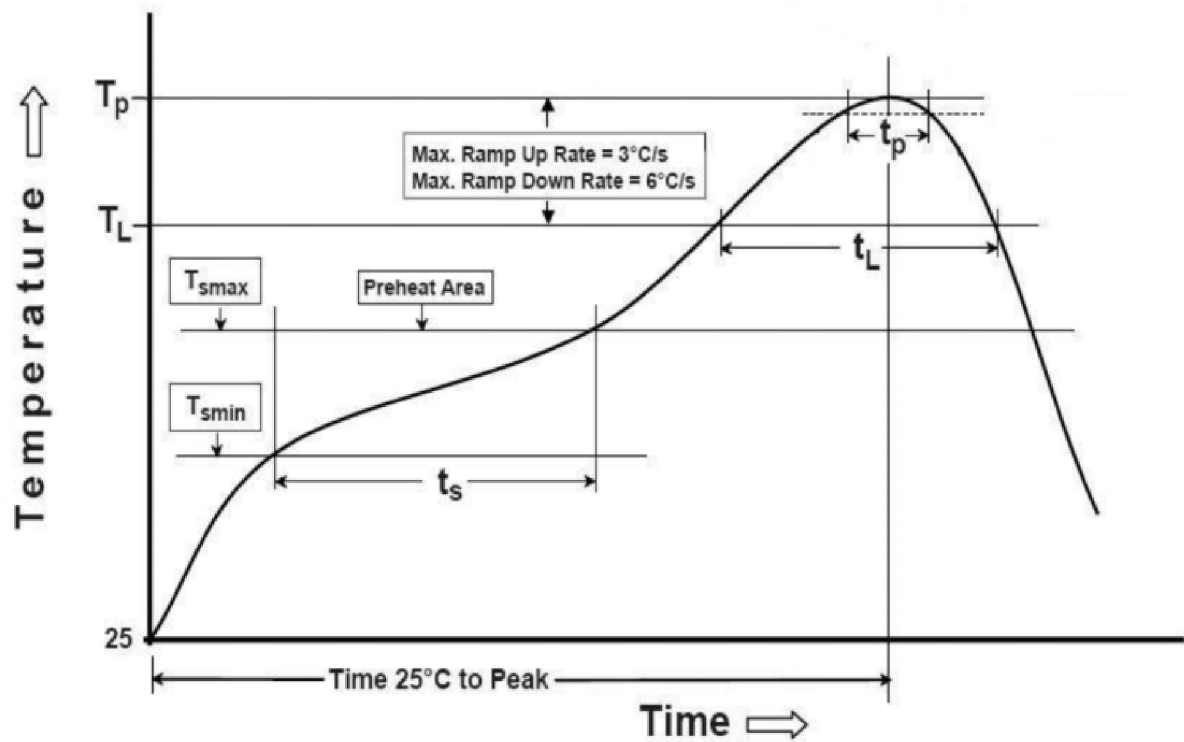
Marking Information



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Suggested Reflow Profile



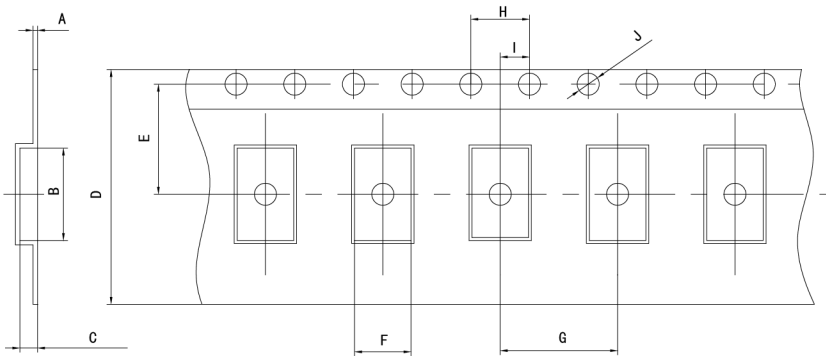
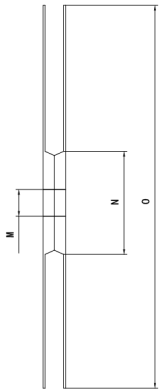
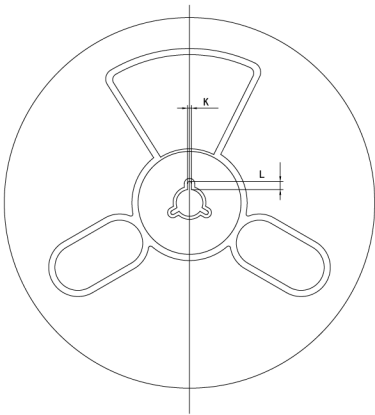
Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak ● Temperature Min (Ts min) ● Temperature Max (Ts max) ● Time (Ts min to Ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate (TL to Tp)	3°C/ second max.	3°C/ second max.
Time maintained above ● Liquidous temperature (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 (3,000pcs/reel)



Pocket Tape Dimensions(mm)

Series	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2X	0.25±0.05	2.25±0.1	0.8±0.1	8.0±0.1	3.5±0.1	2.25±0.1	4.0±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

2X Series				
12.000	12.288	14.31818	16.000	16.384
18.432	19.200	20.000	22.1184	22.5792
24.000	24.305	24.576	25.000	26.000
27.000	27.120	28.63636	30.000	32.000
37.400	38.400	40.000	48.000	50.000
52.000	54.000			

单击下面可查看定价，库存，交付和生命周期等信息

[>>SCTF\(星通时频\)](#)