

1X Series 2.0 x 1.6 mm SMD Crystal

1 : 2.0×1.6×0.45 mm | SMD2016-4P

X : Crystal Resonator

Feature

- AT-cut Crystal Construction
- Ultra miniature Seam sealed ceramic surface mount
- High temperature, high precision and reliability Characteristics
- Package Size:2.0 x 1.6 x 0.45mm
- Pb-free and RoHS/Green compliant

Applications

- Audio Devices
- Portable devices
- Short-range Wireless module
- Computers, Modems, Microprocessors



Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.	16.000		54.000	MHz	
Oscillation Mode		Fundamental (AT-cut)				
Frequency Tolerance	$\Delta f/f$			± 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	C ₀			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	$\pm 10\text{ppm}$	$\pm 15\text{ppm}$	$\pm 20\text{ppm}$	$\pm 30\text{ppm}$
-20°C to +70°C	$\triangle$	★	★	★
-40°C to +85°C		$\triangle$	★	★

★: Available $\triangle$: Conditional

Equivalent Series Resistance

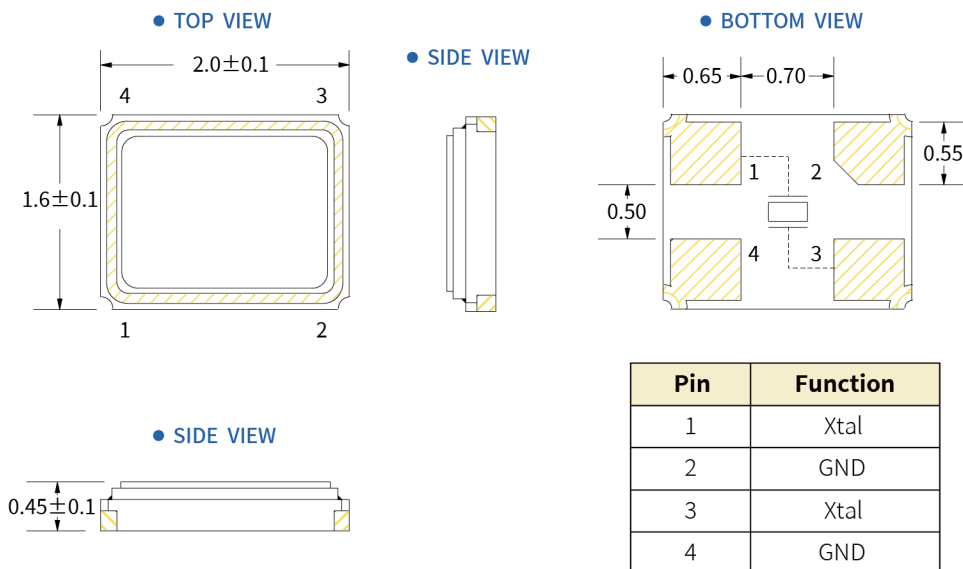
Frequency Range	ESR(Max.)
16MHz $\leq$ Freq. <24MHz	200 Ω
24MHz $\leq$ Freq. <26MHz	80 Ω
26MHz $\leq$ Freq. <40MHz	60 Ω
40MHz $\leq$ Freq. $\leq$ 54MHz	50 Ω

1X Series 2.0 x 1.6 mm SMD Crystal

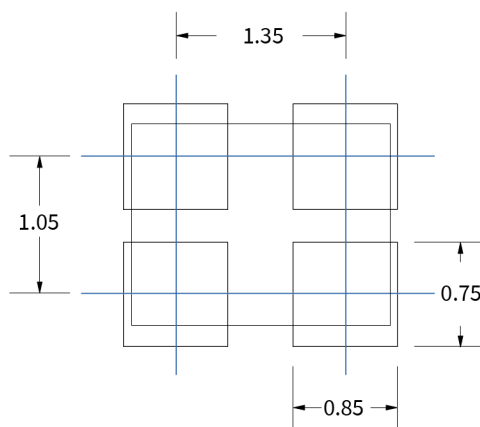
1 : 2.0×1.6×0.45 mm | SMD2016-4P

X : Crystal Resonator

Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)



Options and Part Identification : Example SX1B16.000F1010F30

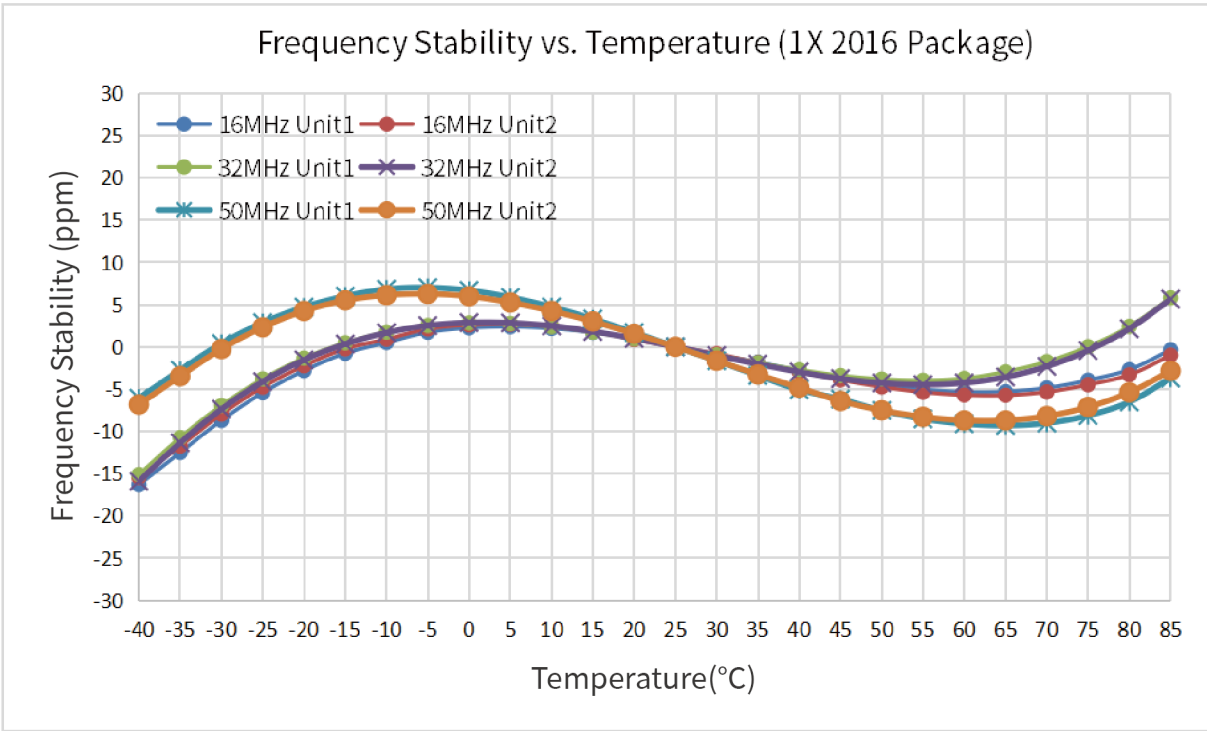
Company	Ceramic Package	Frequency Code [MHz]	Vibration Mode	Load Capacitance	Frequency Tolerance	Operating Temperature	Frequency Drift	
SX	1B	X.XXX	F	10	10	F	30	
Code	Company	Frequency	Code	Vibration Mode	Code	Frequency Tolerance	Code	Frequency Drift
SX	SCTF	16.000	F	AT - Fundamental	10	±10ppm	10	±10ppm
					20	±20ppm	15	±15ppm
							20	±20ppm
							30	±30ppm
	Code	Ceramic Package		Code	Load Capacitance		Code	Operating Temperature
	0B	1.6 x 1.2 x 0.35mm [4PAD]		S	Please specify CL in pF or S for series		E	-20°C ~ +70°C
	1B	2.0 x 1.6 x 0.45mm [4PAD]		06	6pF		F	-40°C ~ +85°C
	2B	2.5 x 2.0 x 0.55mm [4PAD]		08	8pF			
	3B	3.2 x 2.5 x 0.7mm [4PAD]		10	10pF			
	5B	5.0 x 3.2 x 0.8mm[4PAD]		12	12pF			
	5A	5.0 x 3.2 x 0.8mm[2PAD]		20	20pF			
	7B	7.0 x 5.0 x 1.0mm[4PAD]						

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

1X Series 2.0 x 1.6 mm SMD Crystal

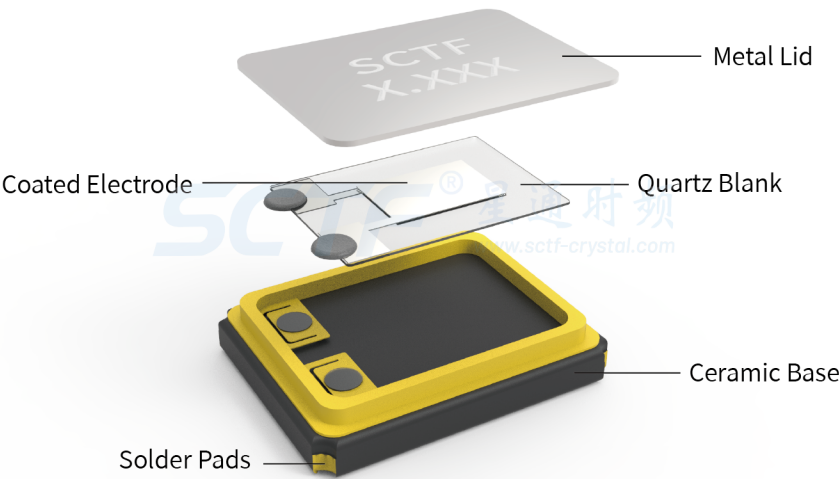
1 : 2.0×1.6×0.45 mm | SMD2016-4P X : Crystal Resonator

Frequency Temperature Characteristics

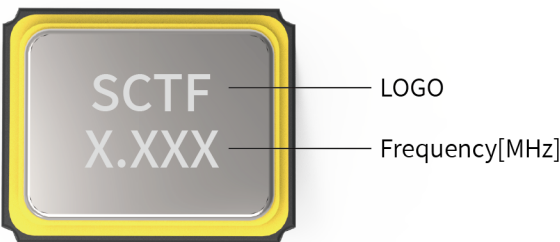


Product Structure&Marking Information

Product Structure



Marking Information

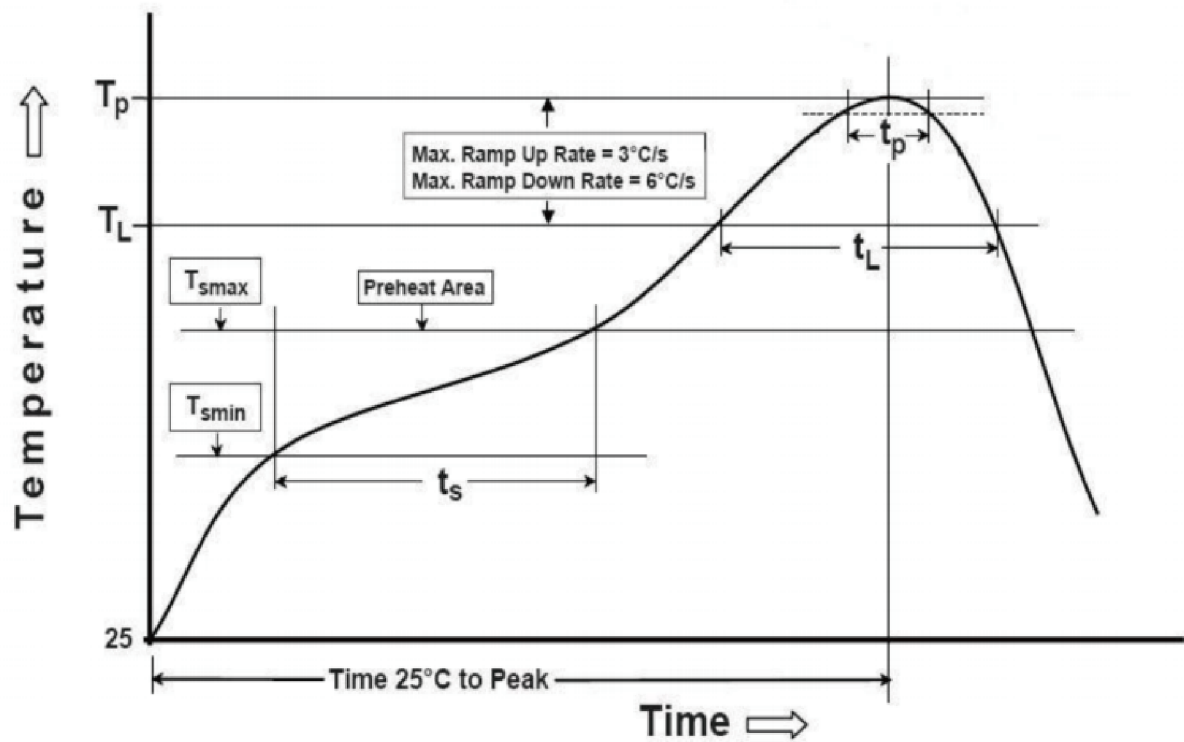


1X Series 2.0 x 1.6 mm SMD Crystal

1 : 2.0×1.6×0.45 mm | SMD2016-4P

X : Crystal Resonator

Suggested Reflow Profile



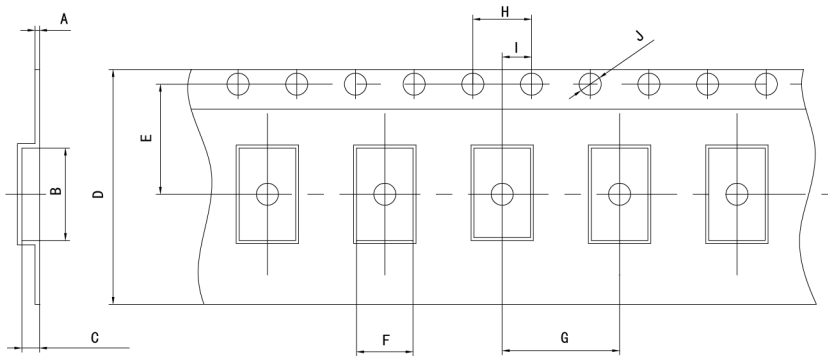
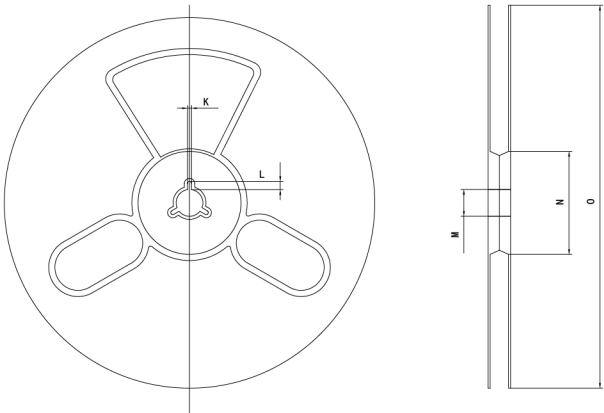
Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak ● Temperature Min (Ts min) ● Temperature Max (Ts max) ● Time (Ts min to Ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate (TL to Tp)	3°C/ second max.	3°C/ second max.
Time maintained above ● Liquidous temperature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

1X Series 2.0 x 1.6 mm SMD Crystal

1 : 2.0×1.6×0.45 mm | SMD2016-4P X : Crystal Resonator

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
1X	0.25±0.05	2.25±0.1	0.7±0.1	8.0±0.3	3.5±0.1	1.85±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

1X Series				
16.000	19.200	20.000	24.000	24.305
24.576	25.000	26.000	27.000	27.120
30.000	32.000	32.768	36.000	37.400
38.400	40.000	48.000	50.000	52.000
54.000				

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Crystals](#) category:

Click to view products by [SCTF](#) manufacturer:

Other Similar products are found below :

[CX3225GB25000M0PPSZ1](#) [FL2000085](#) [99-BU](#) [H10S-12.000-18-EXT-TR](#) [AB-11.0592MHZ](#) [ABC2-6.000MHZ-D4Z-T](#) [ABLS-20.000MHZ-D2-T](#) [ABM3B-27.000MHZ-D4Y-T](#) [ABS071-32.768KHZ-6-T](#) [R38-32.768-12.5-5PPM-NPB](#) [21U15A-21.4MHZ](#) [RTX-781DF1-S-20.950](#) [LFX TAL066198Cutt](#) [9C-14.31818MBBK-T](#) [A-11.000MHZ-27](#) [ABL-27.000MHZ-B4Y-T](#) [ABM11-132-24.000MHZ-T3](#) [ABM3B1-25.000MHZ-D2Y-T](#) [SSPT7F-9PF20-R](#) [LFX TAL065253Cutt](#) [LFX TAL066431Cutt](#) [7A-24.576MBBK-T](#) [CX2520DB16000H0HPQCC](#) [6504-202-1501](#) [6526-202-1501](#) [ABM3B-24.000MHZ-R60-D1W-](#) [ABLS-12.000MHZ-B2Y-T](#) [SG636PCE-20.000MC](#) [3404](#) [CM315D32768EZFT](#) [C1E-19.200-12-1530-X-R](#) [ABM11-16.000MHZ-9-B1U-T](#) [FL5000014](#) [EUCA18-3.1872M](#) [FX0800015](#) [425F35E027M0000](#) [FP0800018](#) [MS3V-T1R-32.768kHz-7pF-20PPM-TA-QC-Au](#) [VXM7-1C1-16M000](#) [MS3V-T1R-32.768kHz-9pF-20PPM-TA-QC-Au](#) [17000](#) [GB1200038](#) [NTE661](#) [R38-32.768-12.5-EXT](#) [4133-VBO-168.62MHZ](#) [4133-VBO-171.750MHZ](#) [NX8045GB-12M-STD-CSF-4](#) [FC1610AN](#) [32.7680KA-A3](#) [FC5BSHFEM25.0-T1](#) [FC5AQCCMF10.0-T1](#)