X1S-SMD Series

- HC49/US-SMD Type package
- AT or BT cut available
- Resistance weld seal
- Tight tolerance / stability over extended temperature
- RoHS / PB Free

PART NUMBER GUIDE

X1S-SMD1 - 4.096 - 30 - 5J - 18

PACKAGE TYPE

X1S-SMD1 : HC-49/US-SMD1 (H:4mm)
X1S-SMD2 : HC-49/US-SMD2 (H:3mm)
X1S-SMD3 : HC-49/US-SMD3 (H:2.5mm)

FREQUENCY
3.579MHz~100.000MHz

LOAD CAPACITANCE
18 : 18pF
8~50pF or Series

TABLE 1

FREQUENCY TOLERANCE AT 25°C
30 : ± 30ppm
±10ppm~ ± 50ppm

ELECTRICAL SPECIFICATIONS

MODEL	X1S-SMD
Frequency Range	4.096MHz (Fundamental)
Operating Temperature Range	-40°C~+85°C
Storage Temperature Range	-55°C~+125°C
Frequency Tolerance (at 25°C)	±30ppm
Frequency Stability over Operating Temperature Range	±20ppm
Load Capacitance (CL)	18pF
Shunt Capacitance (Co)	7pF Max.
Equivalent series resistance	150Ω Max.
Drive Level	100μW Typ. , 500μW Max.
Insulation Resistance	500MΩ Min at 100VDC
Aging	±3ppm Max. /year

ASK

E.S.R (Equivalent Series Resistance)

Frequency Range (MHz)	ESR (Max)	Mode of Oscillation
3.579 ~ 3.999	150	Fundamental / AT
4.000 ~ 4.999	120	Fundamental / AT
5.000 ~ 5.999	80	Fundamental / AT
6.000 ~ 7.999	50	Fundamental / AT
8.000 ~ 9.999	50	Fundamental / AT
10.000 ~ 11.999	50	Fundamental / AT
12.000 ~ 14.999	50	Fundamental / AT
15.000 ~ 19.999	40	Fundamental / AT
20.000 ~ 27.000	30	Fundamental / AT
27.000 ~ 40.000	40	Fundamental / AT
27.000 ~ 40.000	50	Fundamental / BT
27.000 ~ 85.000	80	3rd Overtone / AT

TABLE 1

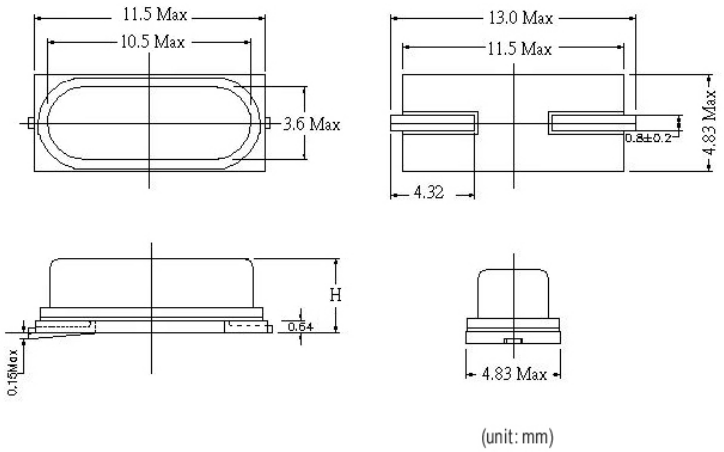
* : Available

FREQUENCY STABILITY VS. TEMPERATURE RANGE									
Temp \ Stability		±5	±7.5	±10	±15	±20	±30	±50	±100
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
-10~+60°C	**A**	*	*	*	*	*	*	*	*
-20~+60°C	**B**		*	*	*	*	*	*	*
0~+70°C	**C**		*	*	*	*	*	*	*
-10~+70°C	**D**		*	*	*	*	*	*	*
-20~+70°C	**E**		*	*	*	*	*	*	*
-30~+60°C	**F**			*	*	*	*	*	*
-20~+85°C	**G**				*	*	*	*	*
-30~+70°C	**H**					*	*	*	*
-30~+85°C	**I**					*	*	*	*
-40~+85°C	**J**					*	*	*	*
-40~+90°C	**K**						*	*	*
-40~+105°C	**L**						*	*	*

ASK

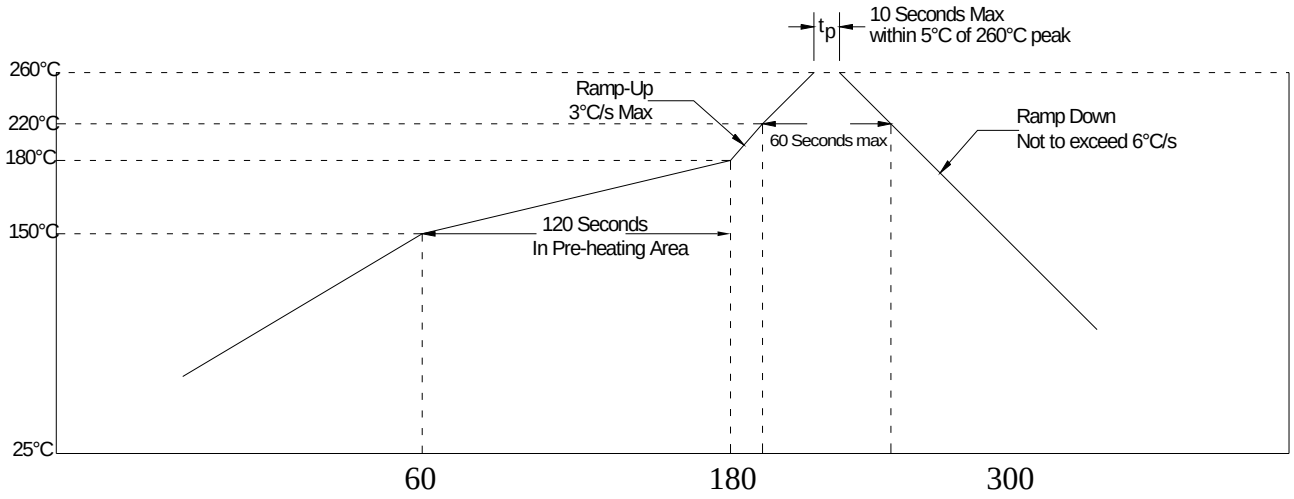
MECHANICAL DIMENSION

X1S-SMD1



MODEL	H
X1S-SMD1	4.0
X1S-SMD2	3.0
X1S-SMD3	2.5

Recommended reflow soldering conditions



RoHS compliance - Reflow soldering temperature : 260°C max.

Green Product

ENVIRONMENTAL / MECHANICAL SPECIFICATIONS

RELIABILITY TEST SPECIFICATION

Test item	Equipment	Condition	Specification
1.SOLDERABILITY TEST	ASK-REL001、RC-328A	1.Soldering Temperature:235±5℃, DIPPING time:5±0.5S 2.Soldering Temperature:260±5℃, DIPPING time:10±1S	1. MIL-STD-883CMETHOD 2003.7 2. MIL-STD-202F,METHOD 210A
2. HERMETICITY TEST	UL-306S	Miss and do not control roughly (hubble-bubble machine); Nothing air bubble creation s thin leave out 1 * 10 E-8 ATM.CC/SEC.	MIL-STD-883C METHOD 1014.9
3. VIBRATION TEST	HG-V4、S&A 250B	Enable Crystal(10g) from 10-55-10Hz,X、Y、Z horizontal,1 Minute vibration/time, 1time/ 2 hours.	JIS C5025 TEST A MIL-STD-883C,METHOD 2007.2
4. MECHANICAL SHOCK	HPC-200、S&A 250B	Enable Crystal 50G(490m/s^2) time=11 ms speed=3.4 m/s half sine wave oscillation	JIS C5026 MIL-STD-883C,METHOD 2002
5. DROP TEST	HARD BOARD.S&A250B	75CM HIGH,3 TIMES ON HARD BOARD	'JIS C6701
6. SALT SPRAY	H-SST-60、RC-328A	5% NaCL,35℃±2℃ CHAMBER,48 hrs.，PH:6.5～7.2	JIS C5028 & MIL-STD-202F'METHOD 101D
7. HIGH&LOW TEMP STORAGE TEST(Static test)	H-PTH-80CK & HM101-3ABN，S&A 350B/250B	High temperature: 125℃±2℃,1000hr； Low temperature:-40℃±3℃,1000hrs	MIL-STD-883C,METHOD 1011.8& JIS C5030
8. Temp & Hum cycling test	H-PTH-80CK CHAMBER，S&A 350B/250B	Temperature:-10℃±2℃ ～ 65℃±2℃, Humidity:93±3%,1 cycle need 24 hrs. 5cycles.	MIL-STD-883C,METHOD 1010.7
9. HIGH TEM. & HUM. STORAGE TEST	H-PTH-80CK CHAMBER，S&A350B/250B	Temperature:40℃±2 ，Humidity:85+3,-2%,Store 96 hrs	JIS C5023
10. Aging test	H-PTH-80CK CHAMBER，S&A350B/250	Temperature: 85℃±2，1000hrs	JIS C5031