

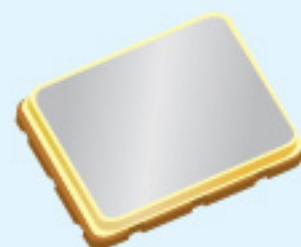
CRYSTAL UNIT



HUAFENG
CRYSTAL

Ceramic SMD Crystal

- Four pad ceramic surface mount package
- AT cut
- Tight tolerance/stability
- Using highly reliable seam weld method
- Tape and reel available, automatic mountable



ELECTRICAL SPECIFICATIONS

Frequency Range	8.000 to 125.000MHz
Operating Temperature Range	-10 to +60°C(STD), -20 to +70°C
Storage Temperature Range	-40 to +85°C
Frequency Tolerance(at 25°C)	± 15, ± 30, ± 50ppm(STD)
Frequency Stability	
Over Operating Temperature Range	± 30, ± 50, ± 100ppm(STD)
Load Capacitance(C _L)	18pF(STD), Custom C _L ≥10pF or Series Resonant
Drive Level	0.01 to 100μW
Shunt Capacitance(C ₀)	7pF Max
Aging (at 25°C)	± 5ppm/year Max
Insulation Resistance	500 MΩ Min at 100V _{DC}

EQUIVALENT SERIES RESISTANCE(ESR)

Frequency Range(MHz)	ESR(Ω Max)	Mode of Oscillation	Package
8.000 ~ 9.999	70	Fundamental	SX-7
10.000 ~ 11.999	60 / 70	Fundamental	SX-7 / SX-6
12.000 ~ 14.999	60 / 60 / 70	Fundamental	SX-7 / SX-6 / SX-5
15.000 ~ 19.999	50 / 60 / 60	Fundamental	SX-7 / SX-6 / SX-5
20.000 ~ 33.000	40 / 50 / 50	Fundamental	SX-7 / SX-6 / SX-5
35.000 ~ 59.999	80	3rd Overtone	SX-7
60.000 ~ 79.999	60	3rd Overtone	SX-7
80.000 ~ 125.000	50	3rd Overtone	SX-7

ENVIRONMENTAL / MECHANICAL SPECIFICATIONS

PARAMETER	SPECIFICATIONS
Seal Integrity	Bubble test in Perfluorocarbon at ± 125°C ± 5°C for 60 seconds minimum.
Thermal shock	Thermal shock between -40 ~ +85°C for 20 hours(10 cycle).
Shock	Random drop on hard wooden plate 3 times from a height of 50cm.
Vibration	Frequency with an amplitude of 1.52mm sweeping between 10Hz to 55Hz within 1 minute(approximately) for 2 hours minimum on each axis (X,Y and Z)for a total of 2 hours.

■ PART NUMBERING GUIDE

HM 18 1 30 A3 - 14.3181 - T&R

PACKAGE TYPE

L5X-7
N5X-6
N5X-5

LOAD CAPACITANCE

18:18pF
30:50pF

MODE OF OSCILLATION

1:FUNDAMENTAL
3:3rd OVERTONE

FREQUENCY TOLERANCE AT 25°C

30:±30ppm

PACKAGE OPTION

BLANK:BLK
T&R: TAPE and REEL

FREQUENCY

CUT MODE

5: ST CUT
- A1 CUT

TABLE 1.

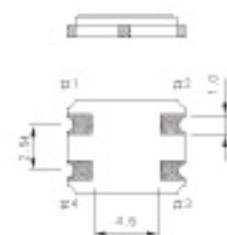
TABLE 1.

*, Available

Stability Temp		FREQUENCY STABILITY VS. TEMPERATURE RANGE							
		±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								*

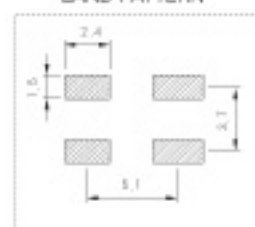
■ MECHANICAL DIMENSIONS

SX-7

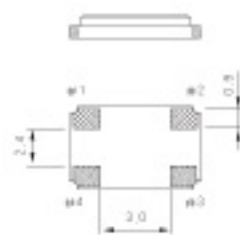


CONNECTION
#1 X-TAL
#2 GND
#3 X-TAL
#4 GND

LAND PATTERN

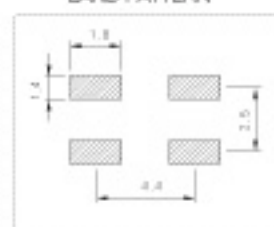


SX-6

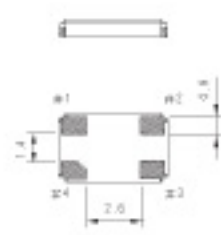


CONNECTION
#1 X-TAL
#2 GND
#3 X-TAL
#4 GND

LAND PATTERN

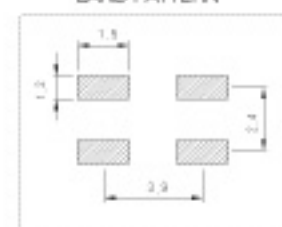


SX-5



CONNECTION
#1 X-TAL
#2 GND
#3 X-TAL
#4 GND

LAND PATTERN



■ TAPE AND REEL DIMENSIONS

TYPE	'A'	'B'	'C'
SX-6	6.5	4.1	1.6
SX-7	7.1	5.3	1.8
SX-5	5.5	3.8	1.4

