

SMD QUARTZ CRYSTAL RESONATOR



2 Pad SMD Crystal 11.5×4.8 mm HC-49SMD

- Package Height 4.2 mm max, 2.8~4.2 mm available
- Reflow soldering temperature: 260℃ max
- highly stable and reliable crystal unit with a metallic package
- Taped Version Standard

RoHS
2011/65/E

RoHS compliant

★ PARAMETERS

PARAMETERS	SPECIFICATION
Frequency Range	3.5 ~ 100MHz
Operation Mode	(3.5 ~ 40MHz) Fundamental (27 ~ 100MHz) 3rd /5rd Overtone
Loading Capacitance	20pF Std. 8 to 33pF , Series available
Drive Level	10 μ W (300 μ W Max)
Frequency Tolerance	±10ppm ~ ±30ppm (at 25℃)
Equivalent Resistance	See Below
Frequency Stability	±2.5ppm ~ ±50ppm
Operating Temp. Range:	0 ~ +50℃ to -40 ~ +85℃
Storage Temp. Range:	-55 ~ +125℃

○ All specification subject change without notice.

★ FREQUENCY STABILITY VS. TEMPERATURE

Operation Temperature Range	Frequency Stability					
	±2.5ppm	±5ppm	±10ppm	±20ppm	±30ppm	±50ppm
0℃~+50℃	○	○	○	●	○	○
-10℃~+60℃		○	○	●	○	○
-20℃~+70℃			○	○	●	○
-40℃~+85℃				○	○	●

● standard ○ available

★ ESR (SERIES RESISTANCE RS)

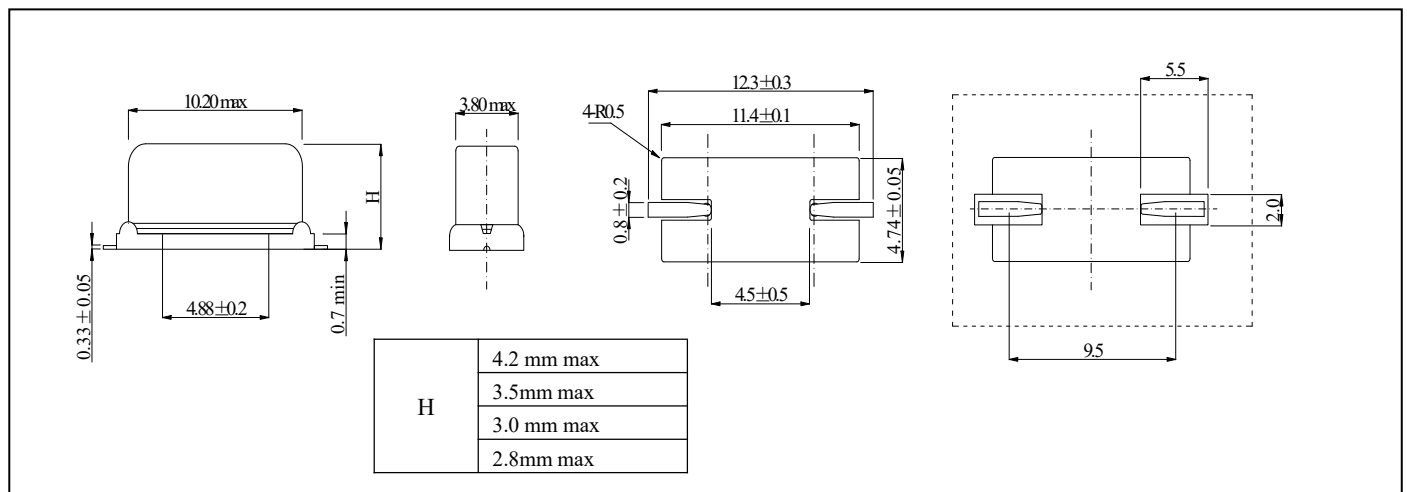
Frequency	Vibration Mode	ESR
3.5-3.999MHz	AT CUT/FUND.	150Ω(MAX)
4.000-4.499MHz	AT CUT/FUND.	120Ω(MAX)
4.500-5.999MHz	AT CUT/FUND.	100Ω(MAX)
6.000-7.999MHz	AT CUT/FUND.	80Ω(MAX)
8.000-9.999MHz	AT CUT/FUND.	60Ω(MAX)
10.000-11.999MHz	AT CUT/FUND.	50Ω(MAX)
12.000-13.999MHz	AT CUT/FUND.	40Ω(MAX)
14.000-40.000MHz	AT CUT/FUND.	30Ω(MAX)
27.000-100MHz	AT 3rd /OT	100Ω(MAX)

★ PART NUMBER GUIDE e.g. FTX16.000M20SM-30/30B (*SM=HC-49/SMD TYPE)

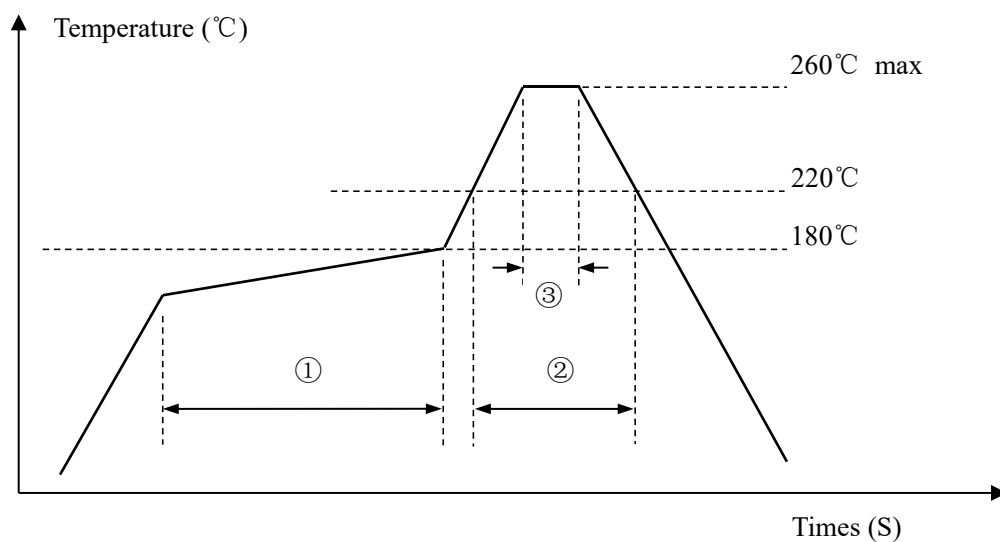
Logo	Quartz Crystal Resonator	Frequency Hz	Load Capacitance pF	Package	Frequency Tolerance ppm	Frequency Stability ppm	Operating Temp. Range
FT	X	16.000M	20	SM	30	30	B

Definition	Description
Operating Temperature Range	A: -10~+60℃
	B: -20~+70℃
	C: -30~+80℃
	D: -40~+85℃
	E: Customer specified

★ DIMENSIONS& LAND PATTERN LAYOUT (Unit: mm)



★ REFLOW SOLDERING PROFILE



Pb free reflow A	①	Preheat	160~180℃	120sec. max
	②	Primary heat	220℃	60sec. max
	③	Peak	260℃	10sec. max.