

**SMD QUARTZ CRYSTAL RESONATOR**

**3 Pad SMD Crystal 11.5×4.8 mm HC-49SMD-3PIN**



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



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	100 μ W ( 500 μ W Max )
Frequency Tolerance	±10ppm ~ ±30ppm ( at 25°C )
Equivalent Resistance	See Below
Frequency Stability	±2.5ppm ~ ±50ppm
Operating Temp. Range:	0 ~ +50°C to -40 ~ +125°C
Storage Temp. Range:	-55 ~ +125°C

○ All specification subject change without notice.

★ **FREQUENCY STABILITY VS. TEMPERATURE**

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

● 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)

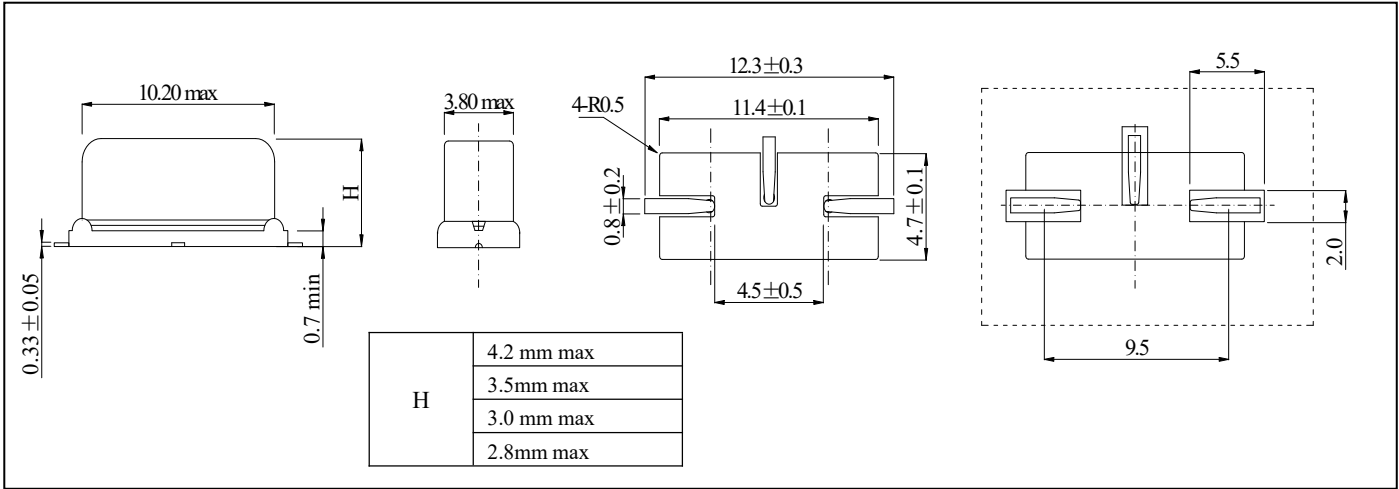
★ **PART NUMBER GUIDE**

e.g. JXX16.000M20SM3P-30/30B (\*SM3P=HC-49/SMD TYPE)

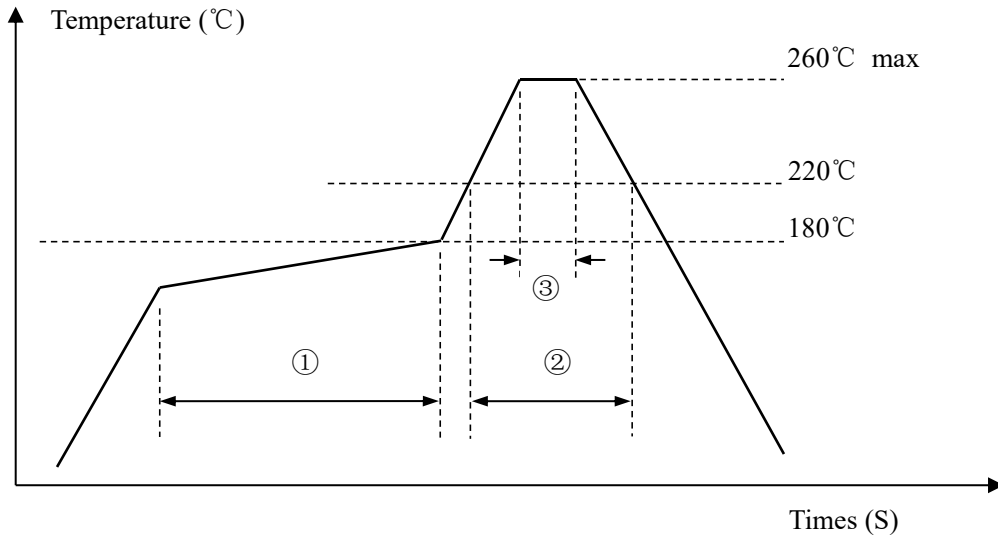
Logo	Quartz Crystal Resonator	Frequency Hz	Load Capacitance pF	Package	Frequency Tolerance ppm	Frequency Stability ppm	Operating Temp. Range
FT	X	16.000M	20	SM3P	30	30	B

Definition	Description	
Operating Temperature Range	<b>A:</b> -10~+60°C	<b>B:</b> -20~+70°C
	<b>C:</b> -30~+80°C	<b>D:</b> -40~+85°C
	<b>E:</b> -30~+105°C	<b>F:</b> -40~+105°C
	<b>G:</b> -40~+125°C	<b>S:</b> Customer specified

★ DIMENSIONS& LAND PATTERN LAYOUT (Unit: mm)



★ REFLOW SOLDERING PROFILE



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