

SMD QUARTZ CRYSTAL RESONATOR

4 Pad Version 8.0×3.8 mm

- Tuning fork crystal in standard package
- 32.768 KHz standard
- ±10 ppm available
- Excellent Reliability Performance
- Reflow soldering temperature: 260°C max



RoHS compliant

★ PARAMETERS

PARAMETERS	SPECIFICATION
Frequency Range	32.768KHz standard, 20.000~165.000KHz
Loading Capacitance	12.5pF Std. 6 to 20pF Series available
Drive Level	1.0 μ W Max
Frequency Tolerance	±10ppm ~ ±30ppm (at 25°C)
Equivalent Resistance	50K Ω Max
Temperature coefficient	-0.04×10 ⁻⁶ /°C ² max
Operating Temp. Range:	-20 ~ +70°C / -40 ~ +85°C
Storage Temp. Range:	-55 ~ +125°C
Aging (25°C , First Year)	±3ppm max

○ All specification subject change without notice.

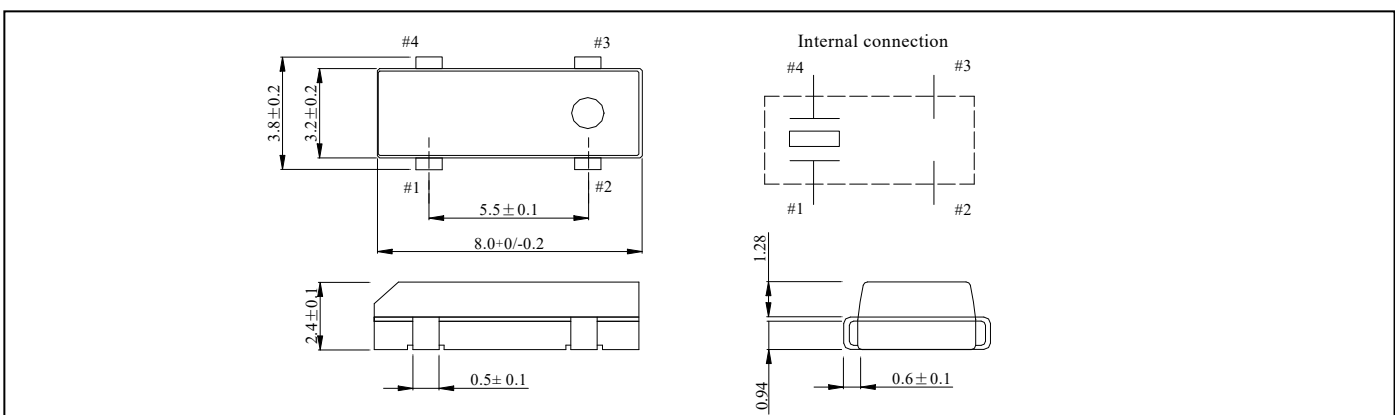
★ FREQUENCY STABILITY VS. TEMPERATURE

Operation Temperature Range	Frequency Stability	
	-80ppm	-160ppm
-20°C~+70°C	●	
-40°C~+85°C		●

● standard ○ available

★ ESR (SERIES RESISTANCE RS)

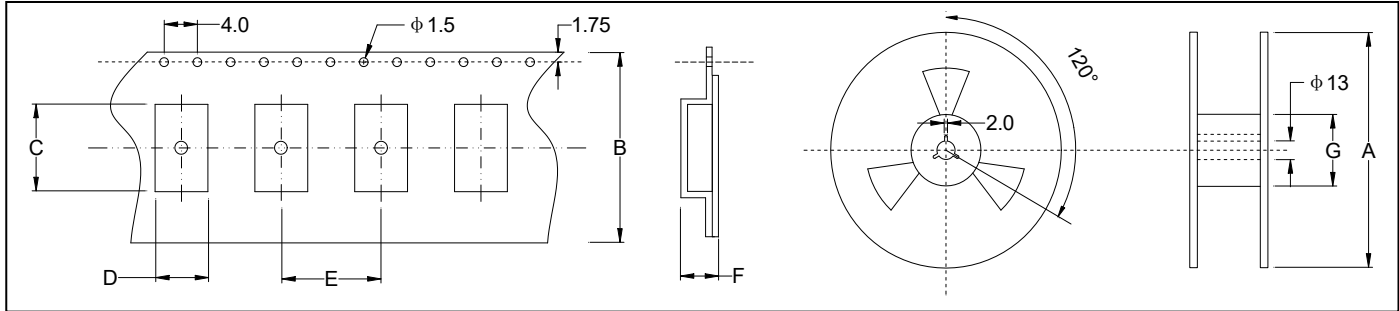
Frequency	20-30KHz	30-40KHz	40-70KHz	70-165KHz
ESR	50KΩ (MAX)	45KΩ (MAX)	20KΩ (MAX)	12KΩ (MAX)

★ DIMENSIONS & LAND PATTERN LAYOUT (Unit: mm)

★ PART NUMBER GUIDE e.g. FTX32.768K12.5SM8-20D (*SM8=8.0×3.8 SMD)

	Quartz Crystal Resonator	Frequency Hz	Load Capacitance pF	Package	Frequency Tolerance ppm	Operating Temp. Range
FT	X	32.768KHz	12.5	SM8	20	D

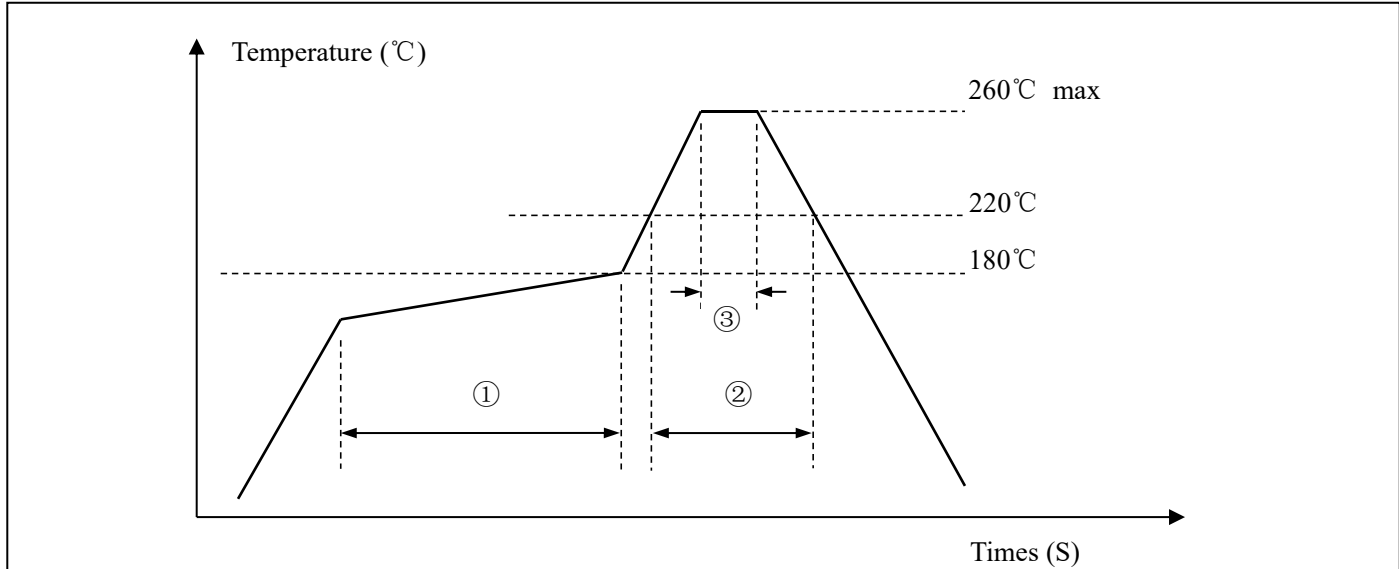
Definition	Description
Operating Temperature Range	A: -10~+60°C
	B: -20~+70°C
	C: -30~+80°C
	D: -40~+85°C
	E: Customer specified

★ TAPING SPECIFICATION (Unit: mm)



	A	B	C	D	E	F	G
SMD8×3.8	330	16	8.4	4.0	8.0	2.8	100
2000 pcs per reel							

★ REFLOW SOLDERING PROFILE



Pb free reflow A	①	Preheat	160~180°C	100sec. max
	②	Primary heat	220°C	35sec. max
	③	Peak	260°C	10sec. max