

Quartz Crystals

X11

[1.6 * 1.2 * 0.4 mm]

X21

[2.0 * 1.6 * 0.5 mm]

X22

[2.5 * 2.0 * 0.6 mm]

X32

[3.2 * 2.0 * 0.7 mm]

Surface Mount

X11, X21, X22, X32

Fundamental

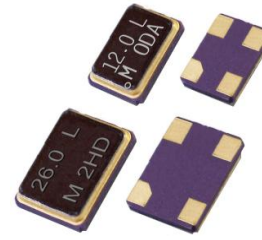
X32

3rd Overtone

Features

Specifications

- The entire package can be grounded via the top metal lid and the two bottom pads
- Small footprint. Ideal for space constrained applications
- Exhibits extremely low aging with a high shock & vibration resistance



General Specifications

Item / Type	X11 (1.6 * 1.2 * 0.4 mm)	X21 (2.0 * 1.6 * 0.5 mm)	X22 (2.5 * 2.0 * 0.6 mm)	X32 (3.2 * 2.5 * 0.7 mm)
Frequency Range	24.0 ~ 48.0 MHz (Fund.)	20.0 ~ 54.0 MHz (Fund.)	12.0 ~ 60.0 MHz (Fund.)	8.0 ~ 54.0 MHz (Fund.) 40 ~ 125 MHz (3rd Overtone)
Crystal Cut // Load Capacitance	AT - Cut // Series or Parallel (8 to 32 pF) resonance			
Drive Level	10 μ W typical (100 μ W max.)			
Frequency Tolerance	\pm 10 ppm, \pm 20 ppm or \pm 30 ppm (max.) at 25°C			
Aging	Δ F / F : \pm 3 ppm / year (max.)			
Storage Temperature Range	- 50°C to 105°C			

ESR (Equivalent Series Resistance)

X11		X21		X22		X32		
Frequency Range	E. S. R.	Frequency Range	E. S. R.	Frequency Range	E. S. R.	Frequency Range	E. S. R.	Oscillator Mode
24.0 ~ 29.9 MHz	120 Ω max.	20.0 ~ 23.9 MHz	120 Ω max.	12.0 ~ 15.9 MHz	300 Ω max.	8.0 ~ 9.9 MHz	600 Ω max.	Fund. Mode
30.0 ~ 36.9 MHz	100 Ω max.	24.0 ~ 29.9 MHz	100 Ω max.	16.0 ~ 29.9 MHz	100 Ω max.	10.0 ~ 11.9 MHz	200 Ω max.	
40.0 ~ 48.0 MHz	80 Ω max.	30.0 ~ 37.9 MHz	80 Ω max.	30.0 ~ 60.0 MHz	70 Ω max.	12.0 ~ 29.9 MHz	100 Ω max.	
		38.0 ~ 54.0 MHz	60 Ω max.			30.0 ~ 54.0 MHz	60 Ω max.	3rd Overtone
						40.0 ~ 200.0 MHz	80 Ω max.	

Frequency stability Vs Operating temperature range

Frequency stability Vs Operating temperature range							
Stability code	Temp. (°C) \ ppm	\pm 5	\pm 10	\pm 15	\pm 20	\pm 25	\pm 30
X	-10 to 60°C	▲	○	○	○	○	○
Y	-20 to 70°C		○	○	○	○	○
I	-40 to 85°C			○	○	○	○

○ : available ;

▲ : contact Mercury

Outline Dimensions (Unit : mm)

X11				X21			
Top View	Bottom View	Suggested Layout		Top View	Bottom View	Suggested Layout	
Pad Connections : Pad 1 and 3 : Crystal Chamfered pad is pad No. 4				Pad Connections : Pad 1 and 3 : Crystal Chamfered pad is pad No. 2			
X22				X32			
Top View	Bottom View	Suggested Layout		Top View	Bottom View	Suggested Layout	
Pad Connections : Pad 1 and 3 : Crystal Chamfered pad is pad No. 1 or 3				Pad Connections : Pad 1 and 3 : Crystal Chamfered pad is pad No. 1 or 4			