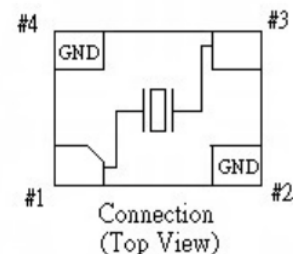
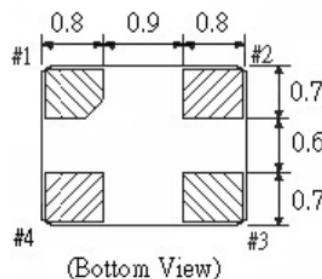
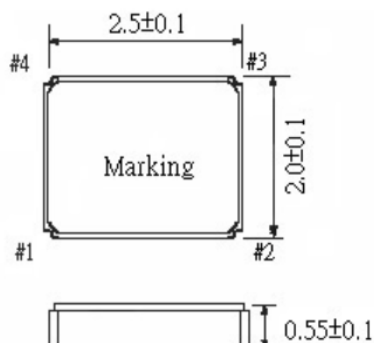


STANDARD SPECIFICATIONS

Frequency Range	12.0 MHz to 80.0 MHz (Fundamental)		
Vibration Mode	AT Cut Fundamental		
Frequency Tolerance (25°C)	± 10 ppm (see Crystal Part Number Guide for more details)		
Load Capacitance (CL)	9.0pF, 12.0pF (see Crystal Part Number Guide for more details)		
Equivalent Series Resistance (E.S.R.)	Frequency (MHz)	Mode	ESR
	12.0 ~ 15.9	Fundamental	180 Ohms Max.
	16.0 ~ 20.9	Fundamental	150 Ohms Max.
	21.0 ~ 30.0	Fundamental	100 Ohms Max.
	31.0 ~ 80.0	Fundamental	60 Ohms Max.
Aging (First Year @ 25°C)	±2 ppm/year max, ±5 ppm/year max		
Frequency Stability over Operating Temperature	± 50 ppm Standard (see Crystal Part Number Guide for more details)		
Drive Level	100µW Max.		
Operating Temperature Range	-40°C ~+125°C (see Crystal Part Number Guide for more details)		
Storage Temperature Range	-40 °C ~+150 °C		
Ordering Instructions (see Crystal Part Number Guide for more details)			
Example: QVS Part # = QCA230-21KF9-20.000			
QCA230 -	±50ppm(@ 25°) 2	±50ppm(Over Temp) 1	-40°C~+125°C K
			Fundamental F
			Load Cap. 9.0pF
			Freq. -20.000MHz

See Engineering-Technical Info for Solder Re-flow and Tape and Reel Specs

Dimensions (Unit:mm)



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Specifications subject to change without notice (Rev IR)