

STANDARD SPECIFICATIONS

Frequency Range	Fundamental	8.0MHz to 40.0 MHz
	3rd OT	40.0 MHz to 100 MHz
Frequency Tolerance (25 °C)	±50 ppm Standard (see Crystal Part Number Guide for more details)	
Resonance	Parallel (18pF Standard) (see Crystal Part Number Guide for more details)	
Shunt Capacitance (Co)	7.0pF max	
Equivalent Series Resistance (E.S.R)	60 Ω max	
Drive Level	10μW ~ 100μW	
Aging (First Year @ 25°C)	±5 ppm max	
Frequency Stability over Operating Temperature	± 100 ppm Standard (see Crystal Part Number Guide for more details)	
Operating Temperature Range	0 °C ~+70 °C Standard (see Crystal Part Number Guide for more details)	
Storage Temperature Range	-40 °C ~+85 °C Standard	

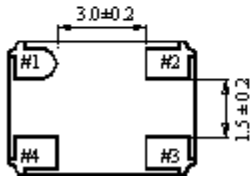
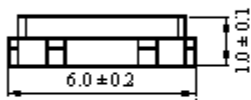
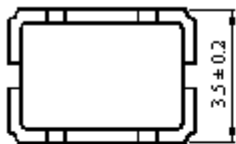
Ordering Instructions (see Crystal Part Number Guide for more details)

Example: QVS Part # = QCM45-21AFT18-20.000

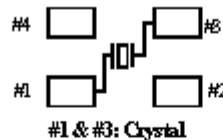
	±50ppm(@ 25°)	±100ppm(Over Temp)	0°C~+70°C	Fundamental	Tape & Reel	Load Cap.	Freq.
QCM45-	2	1	A	F	T	18pF	-20.000MHz

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

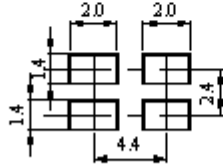
DIMENSIONS (Unit:mm)



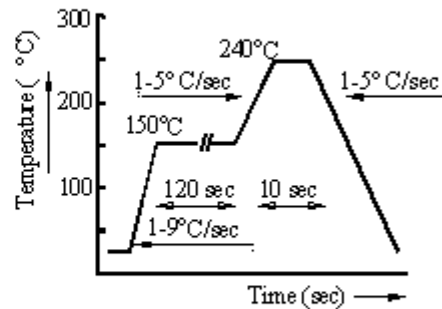
Pin #2 and Pin #4
are connected to ground
through the metal cover of the crystal



RECOMMENDED PAD LAYOUT



Example for soldering conditions



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Specifications subject to change without notice (Rev A)