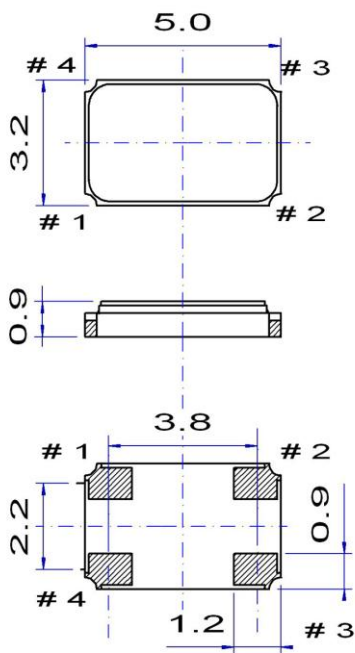


## Miniature SMD Crystal

### Features

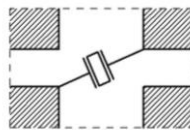
- Applications: telecommunications, automotive, medical, navigation
- Wide frequency range: 8 to 240 MHz
- Highly shock and vibration resistant
- Reflow soldering @ 260 °C

Parameter	Specification	
Frequency range	8 ~ 67 MHz 55 ~ 240 MHz	fundamental 3 <sup>rd</sup> overtone
Mode of oscillation	AT-cut	
Standard frequencies	12.00, 13.00, 16.00, 19.20, 19.44, 20.48, 25.0, 32.0, 40.0 51.20, 61.44 & 230.30 MHz	
Frequency tolerance	±5 ~ ±30 ppm	@ +25 °C
Frequency stability	±10 ~ ±50 ppm	vs. operating temperature range
Aging	±1 ppm	1 <sup>st</sup> year
Load capacitance	series or parallel resonance (CL = 8 ~ 32 pF)	
Equivalent series resistance (ESR)	< 20 Ω < 12 Ω	@ 13 MHz @ 61.44 MHz
Drive level	10 ~ 100 μW	
Operating temperature range	-20 ~ +70 °C -40 ~ +85 °C -40 ~ +125 °C	commercial application industrial application automotive & avionic application
Storage temperature range	-55 ~ +125 °C	
Packaging unit	tape & reel	1'000 or 2'000 pieces
Customer specifications on request		

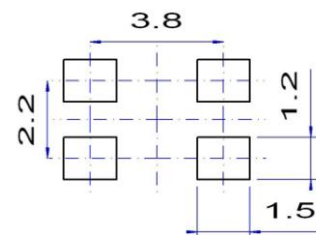


### Pin function

- # 1 crystal connection
- # 2 GND
- # 3 crystal connection
- # 4 GND



### Example for soldering pattern



**Do not design any conductive path between the pattern**

### Example for IR reflow soldering temperature

