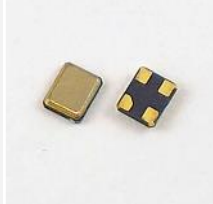


## ULTRA MINIATURE CERAMIC SMD CRYSTAL (2.5 x 2.0 x 0.55mm)

### FEATURES:

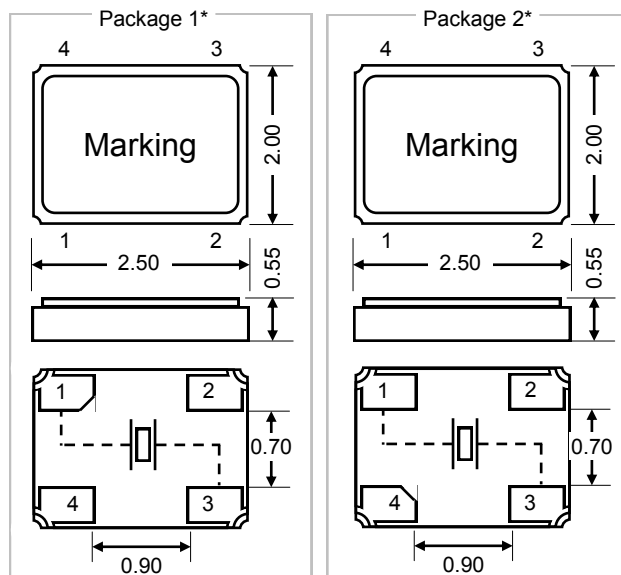
- WIDE FREQUENCY RANGE
- LOW PROFILE / LOW COST
- SUITABLE FOR REFLOW



### ■ SPECIFICATION

<b>FREQUENCY RANGE</b>	12.000MHz ~ 60.000MHz		
<b>STANDARD FREQUENCIES</b>	16.000000MHz 20.250000MHz 24.545450MHz 27.000000MHz	20.000000MHz 22.000000MHz 24.576000MHz 28.636363MHz	20.480000MHz 24.000000MHz 26.000000MHz 32.000000MHz
<b>FREQUENCY TOLERANCE @ 25°C</b>	±10ppm ~ 50ppm (See P/N guide for other options)		
<b>FREQUENCY STABILITY</b>	±10ppm ~ 50ppm (See P/N guide for other options)		
<b>OPERATING TEMPERATURE RANGE</b>	STD: 0°C ~ 70°C, Option: -40°C ~ 85°C (See P/N guide for other options)		
<b>STORAGE TEMPERATURE RANGE</b>	-55°C ~ 125°C		
<b>LOAD CAPACITANCE</b>	STD: 8pF (See P/N guide for other options)		
<b>SHUNT CAPACITANCE</b>	3.5pF max.		
<b>INSULATION RESISTANCE</b>	500MΩ min. @ 100V <sub>DC</sub> ± 15V <sub>DC</sub>		
<b>DRIVE LEVEL</b>	300μW max.		
<b>AGING @ 25°C ± 3°C</b>	±3.0ppm / 1 <sup>st</sup> year max.		
<b>EQUIVALENT SERIES RESISTANCE</b>	12.000MHz - 16.000MHz: 180Ω max. 16.001MHz - 20.000MHz: 150Ω max. 20.001MHz - 30.000MHz: 100Ω max. 30.001MHz - 40.000MHz: 60Ω max. 40.001MHz - 60.000MHz: 50Ω max.		
<b>OPERATION MODE</b>	AT cut, Fundamental		

### ■ PACKAGE DIMENSIONS

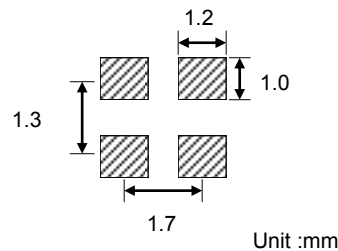


\* Package 1 and 2 are provided interchangeably based on material availability.  
\*\* Different chamfer location between package 1 and 2.

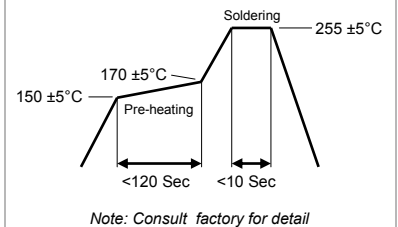
Pin Configuration	
1	Xtal
2	GND
3	Xtal
4	GND

Unit : mm

### ■ SOLDER PATTERN



### ■ REFLOW PROFILE



Note: Consult factory for detail

### ■ PART NUMBERING GUIDE

CS22 - F - 00 - 00 - HM - 08 - 40.000M - TR

<b>Mode</b> F: Fundamental	<b>Stability</b> 00: ± 100ppm 50: ± 50ppm 25: ± 25ppm 15: ± 15ppm 10: ± 10ppm XX: Two digit for Stability	<b>Load Capacitance</b> 08: 8pF    20: 20pF 10: 10pF    22: 22pF 12: 12pF    24: 24pF 16: 16pF    28: 28pF 18: 18pF    32: 32pF S: Series	<b>Other Options</b> TR: Tape and reel
<b>Tolerance @ 25°C</b> 00: ± 100ppm 50: ± 50ppm(standard) 30: ± 30ppm 25: ± 25ppm 10: ± 10ppm XX: Two digit for Tolerance	<b>Operating Temperature</b> A: -55    F: -20    M: 70    S: 100 B: -50    G: -10    N: 75    T: 105 C: -40    H: 0    P: 80    U: 125 D: -35    J: 50    Q: 85    X: custom E: -30    K: 60    R: 90	<b>Frequency</b> M: MHz	

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