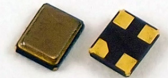


## MINIATURE CERAMIC SMD CRYSTAL (3.2 x 2.5 x 0.7mm)

### FEATURES:

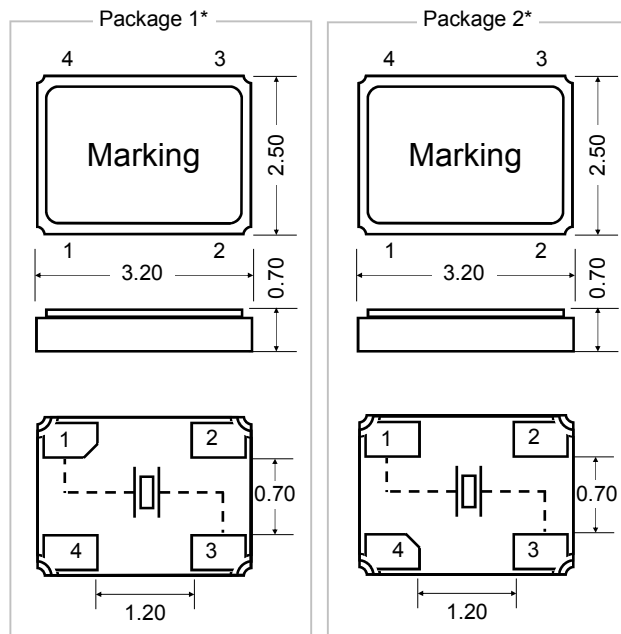
- WIDE FREQUENCY RANGE
- LOW COST SMD PACKAGE
- LOW PROFILE / SUITABLE FOR REFLOW
- AUTOMOTIVE GRADE AEC-Q200 QUALIFIED VERSION AVAILABLE



### ■ SPECIFICATION

<b>FREQUENCY RANGE</b>	8.000MHz ~ 156.25MHz
<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 (See P/N guide for other options)
<b>STORAGE TEMPERATURE RANGE</b>	-55°C ~ 125°C
<b>LOAD CAPACITANCE</b>	STD: 18pF (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>	±2.0ppm / 1 <sup>st</sup> year max.
<b>EQUIVALENT SERIES RESISTANCE</b>	<b>Fundamental:</b> 8.000MHz ~ 9.000MHz: 800Ω max. 10.001MHz ~ 11.000MHz: 120Ω max. <b>Fundamental:</b> 11.001MHz ~ 12.000MHz: 120Ω max. 12.001MHz ~ 13.000MHz: 100Ω max. <b>Fundamental:</b> 13.001MHz ~ 16.000MHz: 80Ω max. 16.001MHz ~ 21.000MHz: 70Ω max. <b>Fundamental:</b> 21.001MHz ~ 30.000MHz: 60Ω max. 30.001MHz ~ 60.000MHz: 50Ω max. <b>3<sup>rd</sup> Overtone:</b> 60.001MHz ~ 156.250MHz: 100Ω max.
<b>OPERATION MODE</b>	AT cut, Fundamental or 3rd Overtone

### ■ PACKAGE DIMENSIONS

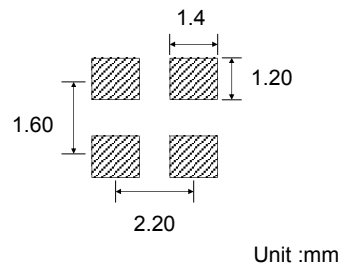


\* Package 1 and 2 are provided interchangeably based on material availability.  
 \*\* Different chamfer location between package 1 and 2.

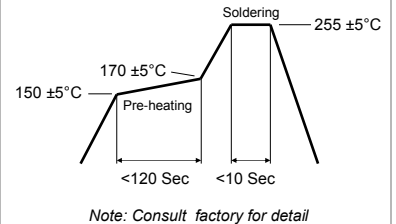
Pin Configuration	
1	Xtal
2	GND
3	Xtal
4	GND

Unit : mm

### ■ SOLDER PATTERN



### ■ REFLOW PROFILE



### ■ PART NUMBERING GUIDE

<b>CS32</b>	<b>- F</b>	<b>00</b>	<b>00</b>	<b>HM</b>	<b>18</b>	<b>-</b>	<b>40.000M</b>	<b>- TR</b>
<b>Mode</b> F: Fundamental T: 3 <sup>rd</sup> overtone	<b>Stability</b> 00: ± 100ppm 50: ± 50ppm(standard) 30: ± 30ppm 25: ± 25ppm 15: ± 15ppm 10: ± 10ppm XX: Two digit for Stability	<b>Load Capacitance</b> 08: 8pF 10: 10pF 12: 12pF 16: 16pF 18: 18pF 20: 20pF 22: 22pF 24: 24pF 28: 28pF 32: 32pF S: Series	<b>Options</b> Q: AEC-Q200 Qualified TR: Tape reel	<b>Tolerance @ 25°C</b> 00: ± 100ppm 50: ± 50ppm(standard) 30: ± 30ppm 25: ± 25ppm 10: ± 10ppm XX: Two digit Tolerance	<b>Operating Temperature</b> A: -55 B: -50 C: -40 D: -35 E: -30 F: -20 G: -10 H: 0 J: 50 K: 60 M: 70 N: 75 P: 80 Q: 85 R: 90 S: 100 T: 105 U: 125 X: custom	<b>Frequency</b> M: MHz		

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