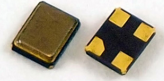


## MINIATURE CERAMIC SMD CRYSTAL (3.2 x 2.5 x 0.7mm)

### FEATURES:

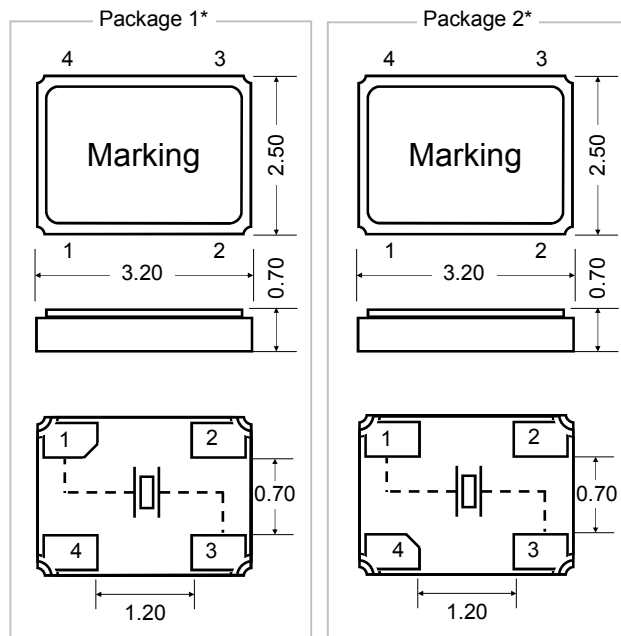
- WIDE FREQUENCY RANGE
- LOW COST SMD PACKAGE
- LOW PROFILE / SUITABLE FOR REFLOW
- AUTOMOTIVE GRADE AEC-Q200 QUALIFIED VERSION AVAILABLE



### ■ SPECIFICATION

FREQUENCY RANGE	8.000MHz ~ 156.25MHz
FREQUENCY TOLERANCE @ 25°C	±10ppm ~ ±50ppm (See P/N guide for other options)
FREQUENCY STABILITY	±10ppm ~ ±50ppm (See P/N guide for other options)
OPERATING TEMPERATURE RANGE	STD: 0°C ~ 70°C (See P/N guide for other options)
STORAGE TEMPERATURE RANGE	-55°C ~ 125°C
LOAD CAPACITANCE	STD: 18pF (See P/N guide for other options)
SHUNT CAPACITANCE	3.5pF max.
INSULATION RESISTANCE	500MΩ min. @ 100V <sub>DC</sub> ± 15V <sub>DC</sub>
DRIVE LEVEL	300μW max.
AGING @ 25°C ± 3°C	±2.0ppm / 1 <sup>st</sup> year max.
EQUIVALENT SERIES RESISTANCE	<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.
OPERATION MODE	AT cut, Fundamental or 3rd Overtone

### ■ PACKAGE DIMENSIONS

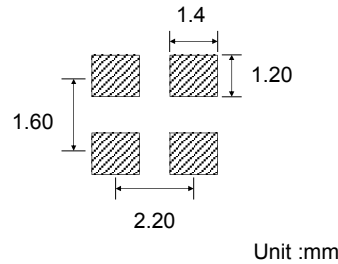


\* Package 1 and 2 are provided interchangeably based on material availability.  
 \*\* Different chamfer location between package 1 and 2.

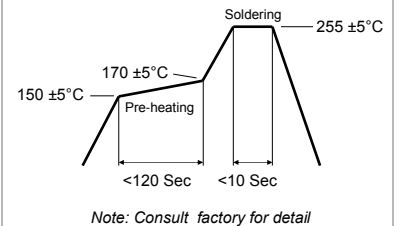
Pin Configuration	
1	Xtal
2	GND
3	Xtal
4	GND

Unit : mm

### ■ SOLDER PATTERN



### ■ REFLOW PROFILE



### ■ PART NUMBERING GUIDE

CS32 - F		00	00	HM	18	-	40.000M	-	TR
<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>Frequency</b> M: MHz	
<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							

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