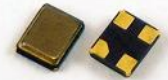


## ULTRA-MINIATURE CERAMIC SMD CRYSTAL (3.2 x 2.5 x 0.65mm)

### FEATURES:

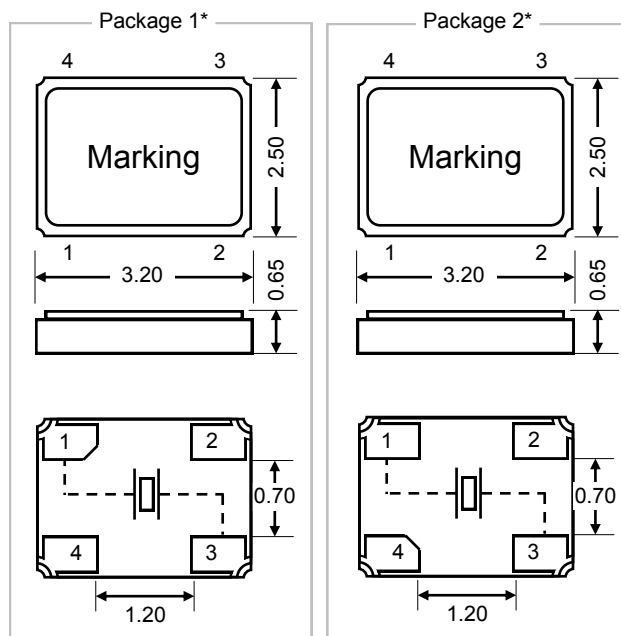
- WIDE FREQUENCY RANGE UP TO 300MHz
- LOW COST CERAMIC PACKAGE
- LOW PROFILE / SUITABLE FOR REFLOW



### ■ SPECIFICATION

FREQUENCY RANGE	20.000MHz ~ 300.000MHz
FREQUENCY TOLERANCE @ 25°C	STD: ±30ppm (See P/N guide for other options)
FREQUENCY STABILITY	STD: ±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	5.0pF max.
INSULATION RESISTANCE	500MΩ min. @ 100V <sub>DC</sub> ± 15V <sub>DC</sub>
DRIVE LEVEL	300μW max.
AGING @ 25°C ± 3°C	±3.0ppm / 1 <sup>st</sup> year max.
EQUIVALENT SERIES RESISTANCE	<b>Fundamental:</b> 20.000MHz ~ 70.000MHz: 40Ω max. <b>3<sup>rd</sup> Overtone:</b> 60.000MHz ~ 115.000MHz: 100Ω max. <b>3<sup>rd</sup> Overtone:</b> 116.000MHz ~ 170.000MHz: 80Ω max. <b>5<sup>th</sup> Overtone:</b> 170.000MHz ~ 300.000MHz: 120Ω max.
OPERATION MODE	Fundamental, 3 <sup>rd</sup> Overtone, 5 <sup>th</sup> Overtone

### ■ PACKAGE DIMENSIONS

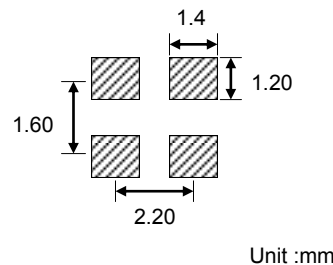


\* Package 1 and 2 are provided interchangeably based on material availability.  
 \*\* Different chamfer location between package 1 and 2.

Pin Configuration	
1	Xtal
2	GND
3	Xtal
4	GND

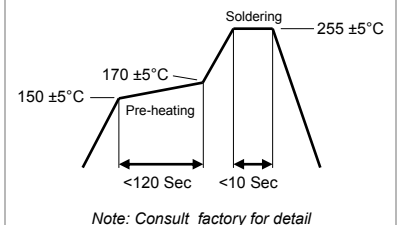
Unit : mm

### ■ SOLDER PATTERN



Unit :mm

### ■ REFLOW PROFILE



Note: Consult factory for detail

### ■ PART NUMBERING GUIDE

CS32H - F - 00 - 00 - HM - 08 - 40.000M - TR

<b>Mode</b> F: Fundamental T: 3 <sup>rd</sup> overtone X: 5 <sup>th</sup> overtone	<b>Stability</b> 00: ± 100ppm 50: ± 50ppm 30: ± 30ppm 20: ± 20ppm 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>Frequency</b> M: MHz																				
<b>Tolerance @ 25°C</b> 50: ± 50ppm 30: ± 30ppm 15: ± 15ppm 10: ± 10ppm XX: Two digit for Tolerance	<b>Operating Temperature</b> <table border="0"> <tr> <td>A: -55</td> <td>F: -20</td> <td>M: 70</td> <td>S: 100</td> </tr> <tr> <td>B: -50</td> <td>G: -10</td> <td>N: 75</td> <td>T: 105</td> </tr> <tr> <td>C: -40</td> <td>H: 0</td> <td>P: 80</td> <td>U: 125</td> </tr> <tr> <td>D: -35</td> <td>J: 50</td> <td>Q: 85</td> <td>X: custom</td> </tr> <tr> <td>E: -30</td> <td>K: 60</td> <td>R: 90</td> <td></td> </tr> </table>		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		
A: -55	F: -20	M: 70	S: 100																				
B: -50	G: -10	N: 75	T: 105																				
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