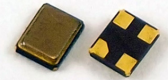


MINIATURE CERAMIC SMD CRYSTAL (3.2 x 2.5 x 0.7mm)

FEATURES:

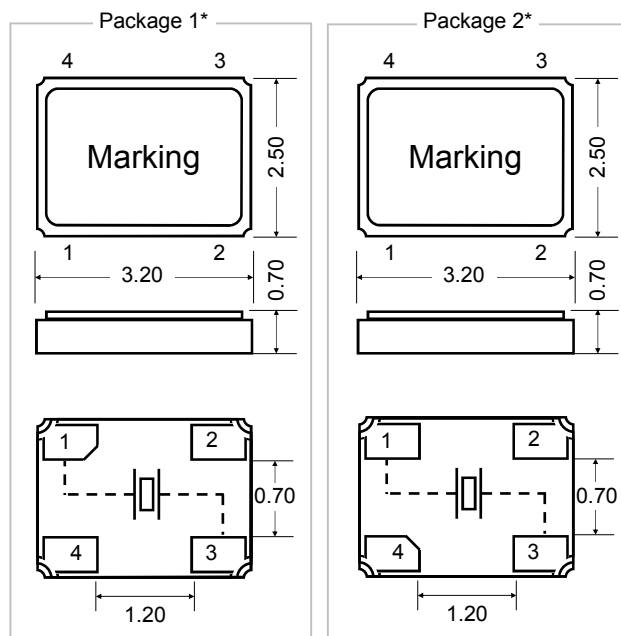
- WIDE FREQUENCY RANGE
- LOW COST SMD PACKAGE
- LOW PROFILE / SUITABLE FOR REFLOW
- AUTOMOTIVE GRADE AEC-Q200 QUALIFIED VERSION AVAILABLE



■ 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 _{DC} ± 15V _{DC} |
| DRIVE LEVEL | 300μW max. |
| AGING @ 25°C ± 3°C | ±2.0ppm / 1 st year max. |
| EQUIVALENT SERIES RESISTANCE | Fundamental: 8.000MHz ~ 9.000MHz: 800Ω max. 10.001MHz ~ 11.000MHz: 120Ω max. Fundamental: 11.001MHz ~ 12.000MHz: 120Ω max. 12.001MHz ~ 13.000MHz: 100Ω max. Fundamental: 13.001MHz ~ 16.000MHz: 80Ω max. 16.001MHz ~ 21.000MHz: 70Ω max. Fundamental: 21.001MHz ~ 30.000MHz: 60Ω max. 30.001MHz ~ 60.000MHz: 50Ω max. 3rd Overtone: 60.001MHz ~ 156.250MHz: 100Ω max. |
| OPERATION MODE | AT cut, Fundamental or 3rd Overtone |

■ PACKAGE DIMENSIONS

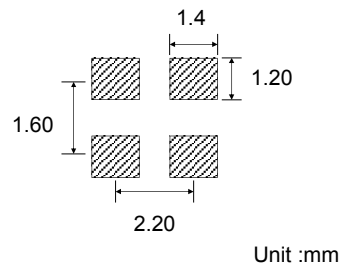


* Package 1 and 2 are provided interchangeably based on material availability.
 ** Different chamfer location between package 1 and 2.

| Pin Configuration | |
|-------------------|------|
| 1 | Xtal |
| 2 | GND |
| 3 | Xtal |
| 4 | GND |

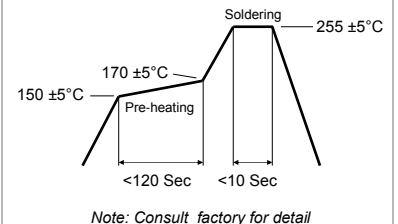
Unit : mm

■ SOLDER PATTERN



Unit : mm

■ REFLOW PROFILE



Note: Consult factory for detail

■ PART NUMBERING GUIDE

| | | | | | | | | | | |
|--|---|---|--|----|----|---|---|---|---------------------------------|----|
| CS32 | - | F | 00 | 00 | HM | 18 | Q | - | 40.000M | TR |
| Mode F: Fundamental T: 3 rd overtone | | | Stability 00: ± 100ppm 50: ± 50ppm(standard) 30: ± 30ppm 25: ± 25ppm 15: ± 15ppm 10: ± 10ppm XX: Two digit for Stability | | | Load Capacitance 08: 8pF 20: 20pF 10: 10pF 22: 22pF 12: 12pF 24: 24pF 16: 16pF 28: 28pF 18: 18pF 32: 32pF S: Series | | | Options TR: Tape reel | |
| Tolerance @ 25°C 00: ± 100ppm 50: ± 50ppm(standard) 30: ± 30ppm 25: ± 25ppm 10: ± 10ppm XX: Two digit Tolerance | | | Operating Temperature 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 | | | Frequency M: MHz | | Frequency Q: AEC-Q200 Qualified | | |

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