

## CRYSTAL UNITS

Automotive Grade

ACTUAL SIZE: ☐

CXAF-012000-3D12A60

CERAMIC PACKAGE



## APPLICATIONS

- ▶ Camera
- ▶ TPMS
- ▶ AVM

## FEATURES

- ▶ Seam Seal
- ▶ Excellent Solderability
- ▶ Excellent Vibration Resistance & Shock Resistance
- ▶ High Frequency Stability
- ▶ Excellent Thermal Hysteresis
- ▶ RoHS Compliant
- ▶ IATF-16949 Certified
- ▶ AEC-Q200 Qualified

## Specification

## MODEL

|           |        |             |
|-----------|--------|-------------|
| DIMENSION | ( mm ) | 3.20 X 2.50 |
|-----------|--------|-------------|

## FREQUENCY

|                                     |     |                                |
|-------------------------------------|-----|--------------------------------|
| FREQUENCY RANGE ( Fundamental )     | MHz | 8.000 ~ 64.000                 |
| FREQUENCY RANGE ( 3rd Overtone )    | MHz | 60.000 ~ 156.250               |
| FREQUENCY TOLERANCE ( 25°C )        | ppm | ± 10 ~ ± 100                   |
| FREQUENCY STABILITY ( Ref to 25°C ) | ppm | ± 20 ~ ± 100      ± 50 ~ ± 100 |

## ENVIRONMENTAL CONDITION

|                             |     |                             |              |
|-----------------------------|-----|-----------------------------|--------------|
| OPERATING TEMPERATURE RANGE | °C  | - 40 ~ + 85 Or - 40 ~ + 125 | - 55 ~ + 125 |
| STORAGE TEMPERATURE RANGE   | °C  | - 55 ~ + 150                |              |
| AGING / YEAR                | ppm | ± 3                         |              |

## ELECTRICAL SPECIFICATIONS

|                              |          |                                             |
|------------------------------|----------|---------------------------------------------|
| TEST CIRCUIT                 |          | S&A 250B With $\pi$ Fixture                 |
| LOAD CAPACITANCE             | pF       | SERIES, 6pF to 47pF, or Specify             |
| DRIVE LEVEL                  | uW       | 15, 30, 50, 100, 200 or special requirement |
| EQUIVALENT SERIES RESISTANCE | $\Omega$ | See Table                                   |
| SHUNT CAPACITANCE            | pF       | 3.0 Max.                                    |

\*Specification subject to change without notice.

Equivalent Series Resistance (  $\Omega$  )

| Frequency Range   | Mode of Operation | ESR               |
|-------------------|-------------------|-------------------|
| 8.000 ~ 9.999     | Fundamental       | 300 $\Omega$ Max. |
| 10.000 ~ 11.999   | Fundamental       | 150 $\Omega$ Max. |
| 12.000 ~ 15.999   | Fundamental       | 80 $\Omega$ Max.  |
| 16.000 ~ 19.999   | Fundamental       | 60 $\Omega$ Max.  |
| 20.000 ~ 24.999   | Fundamental       | 50 $\Omega$ Max.  |
| 25.000 ~ 39.999   | Fundamental       | 40 $\Omega$ Max.  |
| 40.000 ~ 64.000   | Fundamental       | 30 $\Omega$ Max.  |
| 60.000 ~ 124.999  | 3rd Overtone      | 100 $\Omega$ Max. |
| 125.000 ~ 156.250 | 3rd Overtone      | 80 $\Omega$ Max.  |

## Dimension(mm)

## CXAF-321 SERIES

