

### ● FEATURES

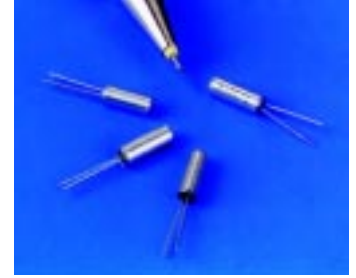
- HIGH FREQUENCY AT CUT CRYSTAL PERFORMANCE
- SMALL COMPACT SIZE
- EXCELLENT SHOCK AND VIBRATION CHARACTERISTICS

### SERIES CSA 309 AND 310

3 x 9 AND 3 x 10

### ● SPECIFICATIONS

| SERIES                                 | CSA310   | CSA309  |
|--|--|---|
| FREQUENCY RANGE                        | 3.579545 MHz TO 4.00 MHz   | 4.00 MHz TO 30.00 MHz (FUND)<br>30.01 MHz TO 70.00 MHz (3 OT) |
| MODE OF OSCILLATION                    | FUNDAMENTAL OR THIRD OVERTONE  |   |
| FREQUENCY TOLERANCE AT 25°C            | ±50 PPM MAXIMUM  |   |
| FREQUENCY STABILITY VERSUS TEMPERATURE | ±50 PPM MAXIMUM  |   |
| OPERATING TEMPERATURE RANGE            | -10°C TO +60°C   |   |
| STORAGE TEMPERATURE RANGE              | -40°C TO +85°C   |   |
| AGING (FIRST YEAR)                     | ±5 PPM   |   |
| LOAD CAPACITANCE                       | 12 pF TO 32 pF OR SERIES   |   |
| SHUNT CAPACITANCE                      | 5.0 pF MAXIMUM   |   |
| EQUIVALENT SERIES RESISTANCE (ESR)     | SEE TABLE  |   |
| DRIVE LEVEL                            | 50 µW TYPICAL<br>100 µW MAXIMUM  | 50 µW TYPICAL<br>100 µW MAXIMUM                               |
| SHOCK RESISTANCE                       | ±5 PPM MAXIMUM 75 cm DROP TEST IN 3 AXES ONTO A HARD SURFACE OR 3000 g's x 0.3 ms x ½ SINEWAVE IN 3 AXES |   |

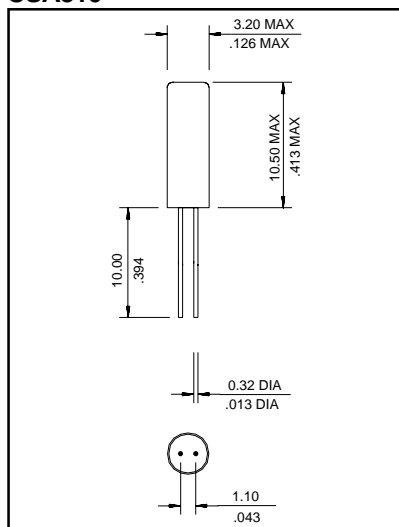


### ● EQUIVALENT SERIES RESISTANCE (ESR) VS. FREQUENCY RANGE

| MODEL TYPE | FREQUENCY (MHz)  | MAXIMUM ESR (OHM) | MODE OF OSCILLATION |
|------------|------------------|-------------------|---------------------|
| CSA310     | 3.579545 TO 4.00 | 200               | FUNDAMENTAL         |
| CSA309     | 4.00 TO 5.999    | 150               | FUNDAMENTAL         |
|            | 6.00 TO 9.999    | 100               | FUNDAMENTAL         |
|            | 10.00 TO 30.00   | 50                | FUNDAMENTAL         |
|            | 30.01 TO 35.99   | 100               | THIRD OVERTONE      |
|            | 36.00 TO 70.00   | 80                | THIRD OVERTONE      |

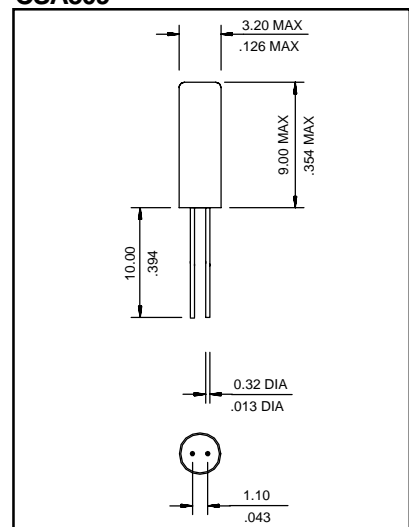
### ● OUTLINE DRAWING

CSA310



Scale none Dimension in  $\frac{\text{mm}}{\text{inch}}$

CSA309



### ● PART NUMBERING SYSTEM

| HOLDER           | FREQUENCY   | LOAD CAPACITANCE                              | MODE          |                                |
|------------------|-------------|---|---------------|--------------------------------|
| CSA309<br>CSA310 | -<br>IN MHz | -<br>12 TO 32 pF FOR PARALLEL<br>S FOR SERIES | -<br>F<br>3OT | FUNDAMENTAL†<br>THIRD OVERTONE |

† FUNDAMENTAL MODE NOT NEEDED IN PART NUMBER

EXAMPLE: CSA309-11.0592-18

CSA309-32.000-20-3OT