

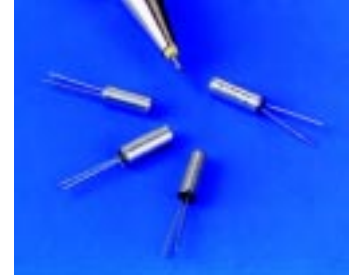
### ● FEATURES

- 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) 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 100 μW MAXIMUM	50 μW TYPICAL 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	

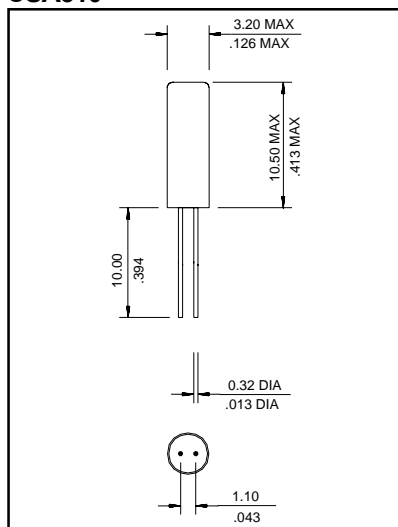


### ● EQUIVALENT SERIES RESISTANCE (ESR) VS. FREQUENCY RANGE

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

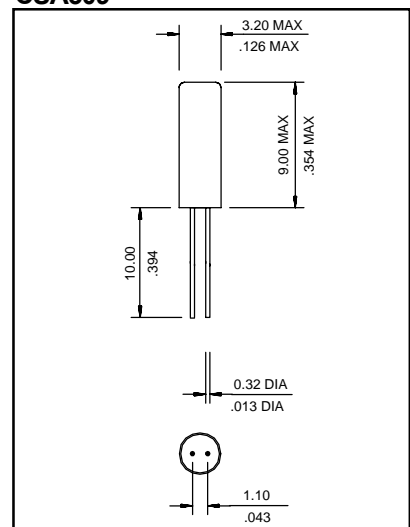
### ● OUTLINE DRAWING

**CSA310**



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

**CSA309**



### ● PART NUMBERING SYSTEM

HOLDER	FREQUENCY	LOAD CAPACITANCE	MODE
CSA309 CSA310	IN MHz	12 TO 32 pF FOR PARALLEL S FOR SERIES	F 3OT

† FUNDAMENTAL MODE NOT NEEDED IN PART NUMBER