

### FEATURES

- DESIGNED FOR TIME OF DAY CLOCKS APPLICATIONS
- SMALL COMPACT SIZE WITH PERFORMANCE AND ECONOMY
- EXCELLENT SHOCK AND ENVIRONMENTAL CHARACTERISTICS

### SPECIFICATIONS

### SERIES R38, R26, AND R145

3 x 8, 2 x 6, 1 x 5 mm

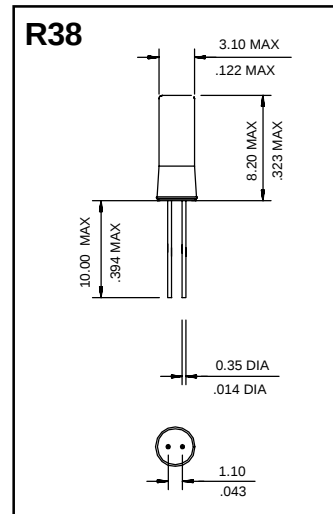
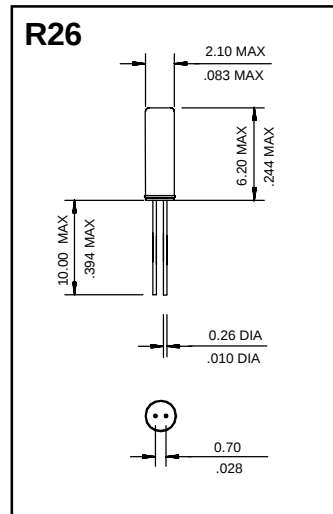
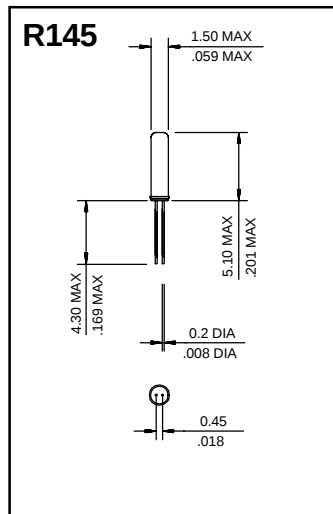
| HOLDER TYPE                           | R38                                                                                                       | R26             | R145             | R38, R26                   |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------|------------------|----------------------------|
| NOMINAL FREQUENCY                     | 32.768 kHz                                                                                                | 32.768 kHz      | 32.768 kHz       | 30.00 kHz TO 153.6 kHz †   |
| FREQUENCY TOLERANCE                   | ±5 ±10 ±20 PPM                                                                                            | ±5 ±10 ±20 PPM  | ±5 ±10 ±20 PPM   | ±5 ±10 ±20 PPM             |
| TURNOVER TEMPERATURE                  | 25°C ±5°C                                                                                                 | 25°C ±5°C       | 25°C ±5°C        | 25°C ±5°C                  |
| PARABOLIC CURVATURE CONSTANT (TYP) †† | -0.034 PPM/C²                                                                                             | -0.034 PPM/C²   | -0.034 PPM/C²    | -0.034 PPM/C²              |
| LOAD CAPACITANCE †††                  | 6 or 12.5 pF                                                                                              | 6 or 12.5 pF    | 8.0 pF           | 6 or 12.5 pF               |
| EQUIVALENT SERIES RESISTANCE (MAX)    | 35k OHM                                                                                                   | 35k OHM         | 40k OHM          | 30k TO 50k OHM             |
| DRIVE LEVEL (TYP)                     | 1.0 µW                                                                                                    | 1.0 µW          | 1.0 µW           | 1.0 µW                     |
| MOTIONAL CAPACITANCE (TYP)            | 0.0035 pF                                                                                                 | 0.003 pF        | 0.0025 pF        | .001 TO .004 pF            |
| SHUNT CAPACITANCE (TYP)               | 1.6 pF                                                                                                    | 1.35 pF         | 1.0 pF           | 0.8 TO 1.7 pF              |
| CAPACITANCE RATIO (TYP)               | 460                                                                                                       | 450             | 400              | 425 TO 800                 |
| AGING (FIRST YEAR MAX)                | ±3 PPM                                                                                                    | ±3 PPM          | ±3 PPM           | ±5 PPM                     |
| QUALITY FACTOR (TYP)                  | 90000                                                                                                     | 70000           | 80000            | FREQUENCY-PACKAGE SPECIFIC |
| INSULATION RESISTANCE (MIN)           | 500 M OHM                                                                                                 | 500 M OHM       | 500 M OHM        | 500 M OHM                  |
| OPERATING TEMPERATURE RANGE           | -20°C TO +60°C STANDARD<br>-40°C TO +85°C EXTENDED                                                        |                 |                  |                            |
| STORAGE TEMPERATURE RANGE             | -40°C TO +85°C                                                                                            |                 |                  |                            |
| SHOCK RESISTANCE                      | ±5 PPM MAXIMUM 75 cm DROP TEST IN 3 AXES ONTO A HARD SURFACE<br>OR 3000 g x 0.3 ms x ½ SINEWAVE IN 3 AXES |                 |                  |                            |
| STANDARD PART NUMBER                  | R38-32.768-12.5                                                                                           | R26-32.768-12.5 | R145-32.768-12.5 | SEE PART NUMBERING SYSTEM  |

† COMMON FREQUENCIES ARE: 31.250 kHz, 31.500 kHz, 40.00 kHz, AND 76.800 kHz

†† FREQUENCY DEVIATION AT T IS GIVEN AS:  $D f/f = K(T_o - T)^2$ , WHERE K IS PARABOLIC CURVATURE CONSTANT

††† OTHER LOAD CAPACITANCES ARE AVAILABLE

### OUTLINE DRAWINGS



SCALE NONE DIMENSION IN mm/INCH

### PART NUMBERING SYSTEM

| SERIES             | FREQUENCY   | LOAD CAPACITANCE | TOLERANCE              | EXTENDED TEMPERATURE        |
|--------------------|-------------|------------------|------------------------|-----------------------------|
| R38<br>R26<br>R145 | -<br>IN kHz | -<br>IN pF       | -<br>±5 PPM<br>±10 PPM | -<br>EXT<br>( ±20 PPM ONLY) |

EXAMPLES:

R38-32.768-6-10PPM

R26-32.768-12.5-EXT