

### ● FEATURES

### SERIES R38, R26, AND R145

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

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

### ● SPECIFICATIONS

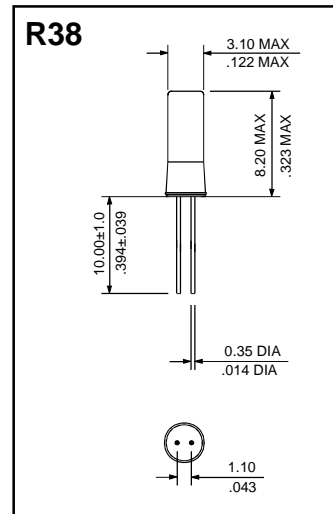
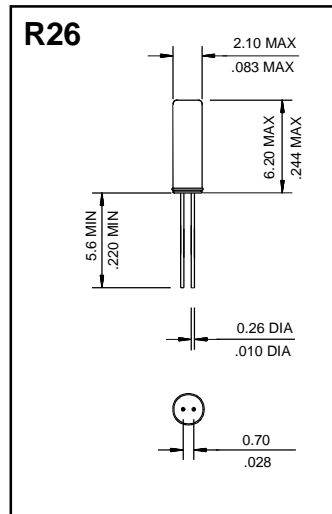
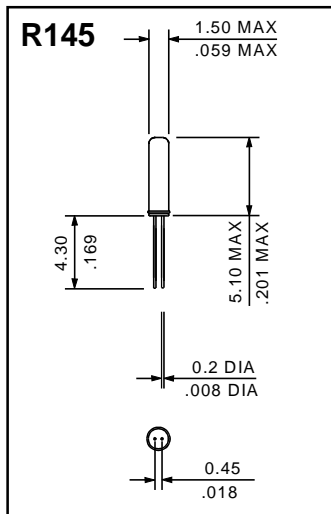
| HOLDER TYPE                           | R38   | R26                       | R145                      | R38, R26                   |
|---------------------------------------|---|---------------------------|---------------------------|----------------------------|
| NOMINAL FREQUENCY                     | 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/C <sup>2</sup>   | -0.034 PPM/C <sup>2</sup> | -0.034 PPM/C <sup>2</sup> | -0.034 PPM/C <sup>2</sup>  |
| 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:  $\Delta f/f = K(T_o - T)^2$ , 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 | IN kHz    | IN pF            | ±5 PPM<br>±10 PPM | EXT<br>( ±20 PPM ONLY) |

EXAMPLES:

R38-32.768-6-10PPM

R26-32.768-12.5-EXT