

### Features

- Frequency range : 32.768 kHz
- SMD : Ceramic package
- External dimensions (mm)  
L : 3.2 x W : 1.5 x H : 0.75
- RoHS compliant & Pb free

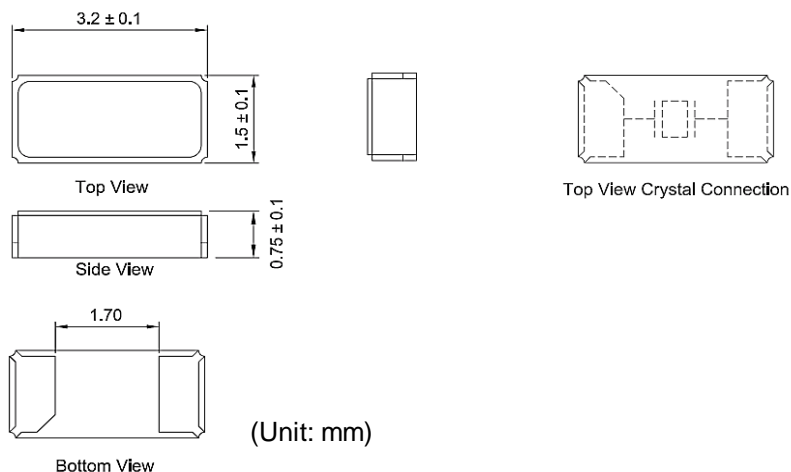
### Applications

- Small mobile devices
- Communication devices
- Consumer products
- Commercial & industrial applications

### Electrical Characteristics

| Item                        | Symbol         | QT3C   | Conditions                    |
|-----------------------------|----------------|--|-------------------------------|
| Nominal Frequency           | $f_0$          | 32.768 kHz   |                               |
| Frequency Tolerance         | $\Delta f/f_0$ | $\pm 10\text{ppm}$ , $\pm 20\text{ppm}$ , $\pm 30\text{ppm}$ | at 25°C                       |
| Load Capacitance            | $C_L$          | 6pF, 7pF, 9pF, 12.5pF  |                               |
| Operating Temperature Range | $T_{OTR}$      | -40°C ~ +85°C  |                               |
|                             |                | -40°C ~ +125°C   |                               |
| Storage Temperature Range   | $T_{STR}$      | -55°C ~ +125°C   |                               |
| Turnover Temperature        | $T_M$          | 25°C $\pm$ 5°C   |                               |
| Temperature Coefficient     | $\beta$        | -0.04 ppm/°C <sup>2</sup> Max.                               |                               |
| Motional Capacitance        | $C_1$          | 3.1 fF Typ.  |                               |
| Motional Resistance (ESR)   | $R_1$          | 70 kΩ Max.   | at 25°C                       |
| Drive Level                 | $D_L$          | 0.1μW Typ. / 1.0μW Max.                                      |                               |
| Aging                       | $\Delta f/f_0$ | $\pm 3$ ppm Max.   | at 25°C $\pm$ 3°C, first year |
| Shunt Capacitance           | $C_0$          | 1.0 pF Typ.  |                               |

### Dimensions



### Ordering Information

**QT3C - 32.768K D Z F - T**

|                                      |                         |
|--------------------------------------|-------------------------|
| <b>Frequency Tolerance (at 25°C)</b> | <b>Package Method</b>   |
| A ± 30 ppm                           | T Tape & Reel           |
| D ± 20 ppm                           |                         |
| E ± 10 ppm                           |                         |
| <b>Operating Temperature Range</b>   | <b>Load Capacitance</b> |
| Z -40°C ~ +85°C                      | B 6 pF                  |
| W -40°C ~ +125°C                     | Y 7 pF                  |
|                                      | C 9 pF                  |
|                                      | F 12.5 pF               |

### Packing

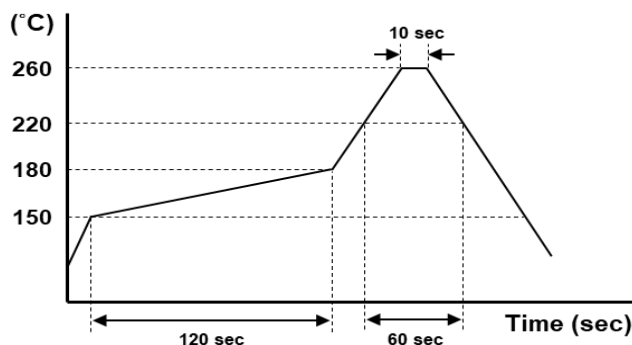
$A_o = 1.8 \pm 0.10 \text{ mm}$   
 $B_o = 3.5 \pm 0.10 \text{ mm}$   
 $K_o = 1.0 \pm 0.10 \text{ mm}$

| CARRIER TAPE DIMENSIONS | K1 | P0 | P1 | P2 | D0   | D1  | E    | F   | 10P0 | W  | T    |
|-------------------------|----|----|----|----|------|-----|------|-----|------|----|------|
|                         | -  | 4  | 4  | 2  | 1.55 | 1.1 | 1.75 | 5.5 | 40   | 12 | 0.25 |

| REEL DIMENSIONS | W      | W1     | L        | L1       |
|-----------------|--------|--------|----------|----------|
|                 | 16±1.4 | 13±0.3 | 180+0/-3 | 60.2±0.5 |

(Unit: mm)

### Reflow Profile



Total time : Max. 200 sec.  
Solder melting point : 220°C