

## Features

Frequency range : 32.768 kHz  
 SMD seam sealing ceramic package  
 Supply voltage : 1.8V ~ 3.3V  
 CMOS output  
 Tri-state function available  
 External dimensions (mm)  
 L : 5.0 x W : 3.2 x H : 1.2  
 RoHS compliant & Pb free

## Applications

Real-time clock (RTC)  
 PC, NB, Tablet, STB  
 Audio, Video, Gaming  
 Server, Switch, Router  
 Security devices  
 Consumer products

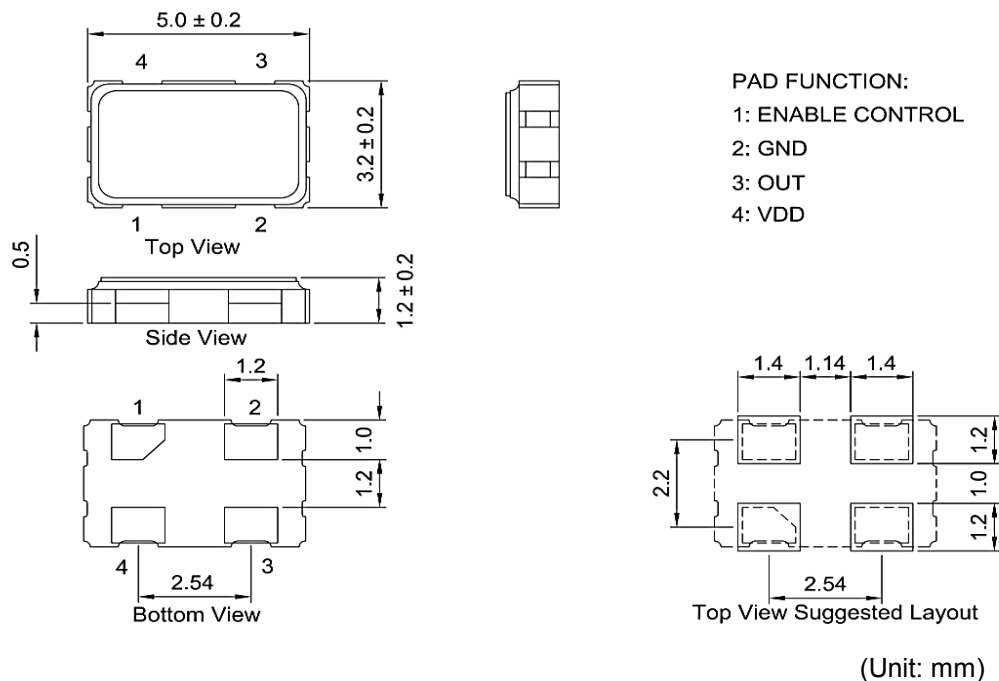
## Electrical Characteristics

| Item                                      | 7CZ               | Conditions                |
|-------------------------------------------|-------------------|---------------------------|
| Frequency Range ( $F_0$ )                 | 32.768 kHz        |                           |
| Frequency Stability ( $F_{stab}$ )        | ±25ppm            | -10°C ~ +70°C             |
|                                           | ±50ppm, ±25ppm    | -40°C ~ +85°C             |
| Operating Temperature Range ( $T_{OTR}$ ) | -10°C ~ +70°C     |                           |
|                                           | -40°C ~ +85°C     |                           |
| Supply Voltage ( $V_{DD}$ )               | 1.8V, 2.5V, 3.3V  | $V_{DD} \pm 10\%$         |
| Current Consumption ( $I_{DD}$ )          | 3 mA Max.         |                           |
| Output Type                               | CMOS              |                           |
| Output Load ( $C_L$ )                     | 15 pF             |                           |
| Output Voltage High ( $V_{OH}$ )          | 90% $V_{DD}$ Min. |                           |
| Output Voltage Low ( $V_{OL}$ )           | 10% $V_{DD}$ Max. |                           |
| Rise & Fall Time ( $T_r / T_f$ )          | 200 ns Max.       | 10% ~ 90% of $V_{DD}$     |
| Duty Cycle                                | 45% ~ 55%         |                           |
| Start-up Time                             | 10 ms Max.        |                           |
| Enable Voltage High, Logic "1"            | 70% $V_{DD}$ Min. | Input to Pin1<br>Note [1] |
| Enable Voltage Low, Logic "0"             | 30% $V_{DD}$ Max. |                           |
| Aging ( $F_{aging}$ )                     | ±5 ppm Max.       | at 25°C±3°C, first year   |
| Storage Temperature Range ( $T_{STR}$ )   | -55°C ~ +125°C    |                           |

### Notes:

[1] Output will be enable if Pin1 is Logic "1" or Open; Output will be disable if Pin1 is Logic "0".

## Dimensions

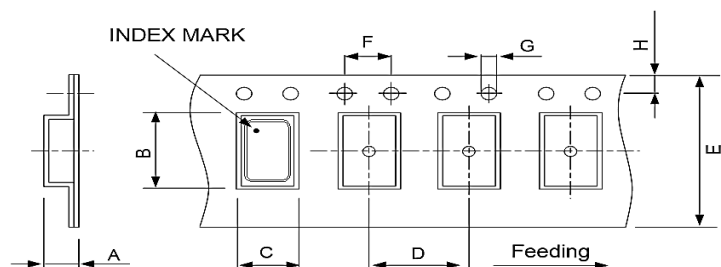


## Ordering Information

7CZ - 32.768K - B E - T

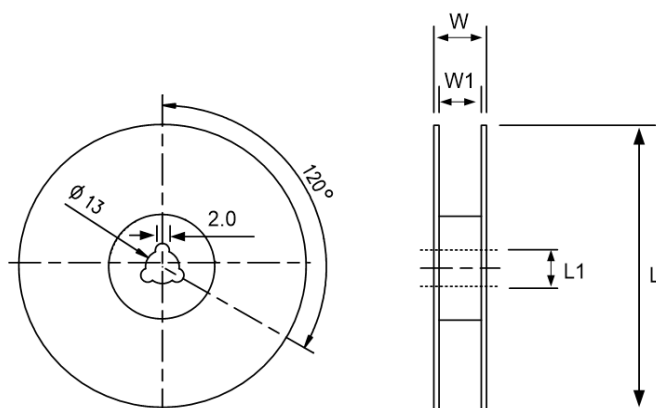
| Supply Voltage | Packaging Method | Frequency Stability         |
|----------------|------------------|-----------------------------|
| B 3.3 V        | T Tape & Reel    | A ±25 ppm ( -10°C ~ +70°C ) |
| C 2.5 V        |                  | D ±25 ppm ( -40°C ~ +85°C ) |
| D 1.8 V        |                  | E ±50 ppm ( -40°C ~ +85°C ) |

## Packing



| DIMENSIONS | A    | B   | C   | D | E  | F | G    | H    |
|------------|------|-----|-----|---|----|---|------|------|
|            | 1.70 | 5.4 | 3.6 | 8 | 12 | 4 | 1.55 | 1.75 |

(Unit: mm)



| DIMENSIONS | L   | L1 | W    | W1 |
|------------|-----|----|------|----|
|            | 180 | 13 | 16.5 | 12 |

(Unit: mm)

## Reflow Profile

Solder melting point :  $220^{\circ}\text{C} \pm 10^{\circ}\text{C}$ , 60 sec. Min.

Peak temperature :  $260^{\circ}\text{C} \pm 10^{\circ}\text{C}$ , 10 sec. Min.

