

### 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 : 3.2 x W : 2.5 x H : 1.0
- RoHS compliant & Pb free

### Applications

- Real-time clock (RTC)
- WLAN, NFC, SiP Modules
- PC, NB, Tablet, Computer peripherals
- Audio, Video, Gaming, DSC, STB
- Server, Switch, Router
- Security devices, Smart meters
- Consumer products
- Internet of Things (IoT)

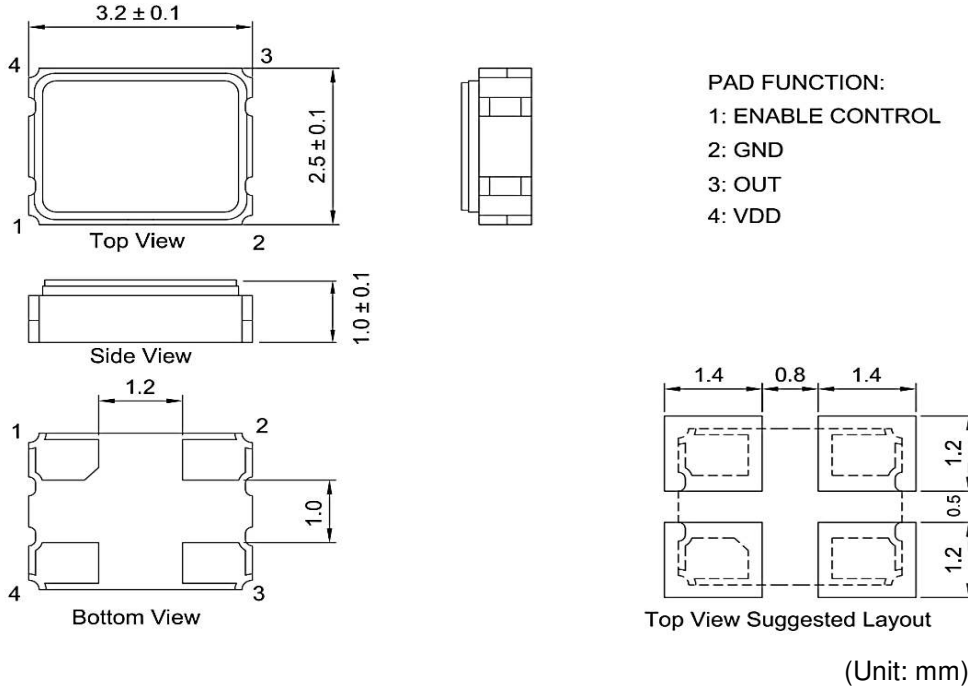
### Electrical Characteristics

| Item                                      | QTK325                     | Conditions                          |
|---|----------------------------|-------------------------------------|
| Frequency Range ( $F_0$ )                 | 32.768 kHz                 |                                     |
| Frequency Stability ( $F_{stab}$ )        | $\pm 25$ ppm               | -10°C ~ +70°C                       |
|   | $\pm 50$ ppm, $\pm 25$ ppm | -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 ( $F_{aging}$ )                     | $\pm 5$ ppm Max.           | at 25°C $\pm 3^\circ$ C, first year |
| Storage Temperature Range ( $T_{STR}$ )   | -55°C ~ +125°C             |                                     |

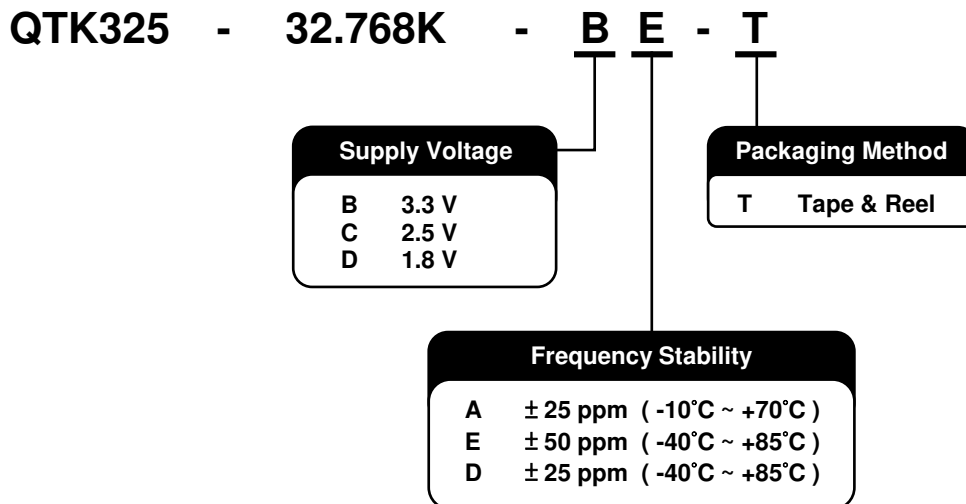
#### Notes:

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

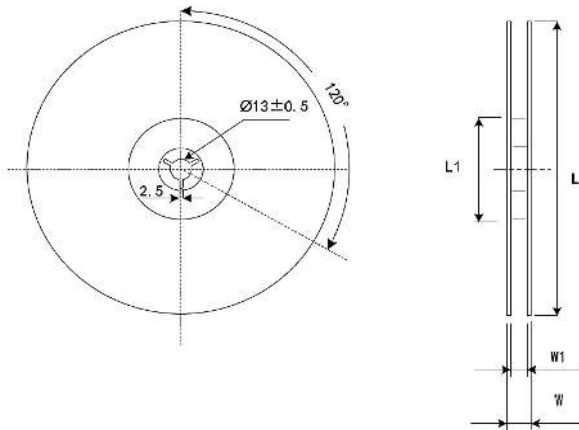
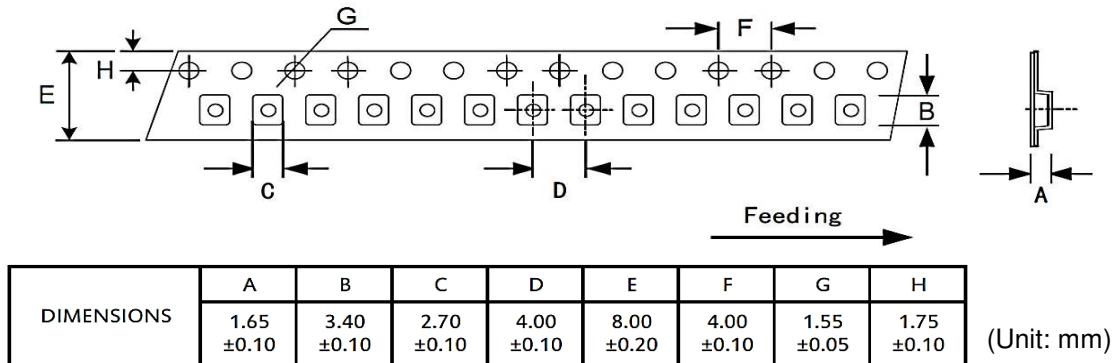
## Dimensions



## Ordering Information



## Packing



| DIMENSIONS | L            | L1            | W            | W1         |
|------------|--------------|---------------|--------------|------------|
|            | 178<br>±1.00 | 60.2<br>±0.50 | 11.5<br>±0.2 | 8<br>+1/-0 |

(Unit: mm)

## Reflow Profile

Solder melting point : 220°C ± 10°C, 60 sec. Min.

Peak temperature : 260°C ± 10°C, 10 sec. Min.

