

Features

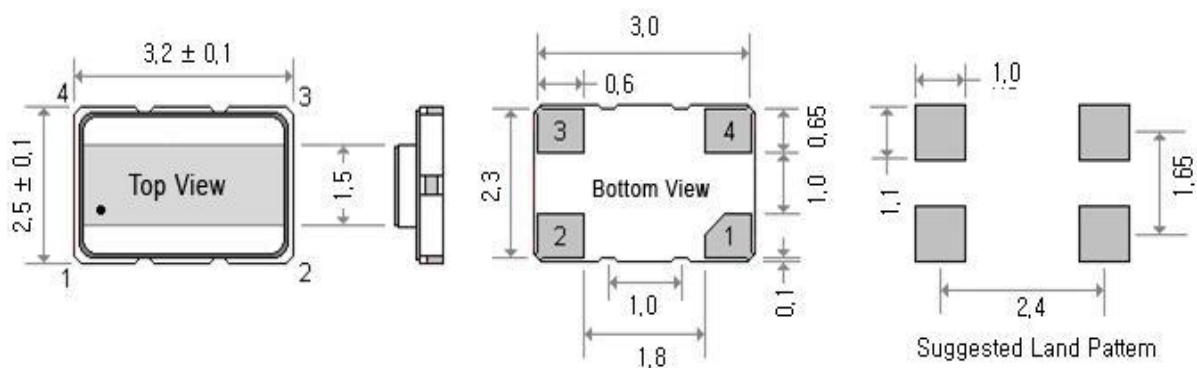
- CMOS32.768KHz with a max. Stability of ± 5 ppm
- Temp. Compensation Technique build-in
- Ultra Low Power Consumption
- Small SMD Package (3.2x2.5mm)

Applications

- RTCs
- Smart Metering/Data Loggers
- Timing Synchronization
- GPS Receivers/Telematics
- Portable Instruments


BT3225_RTC Specifications

| Parameter | Value | | | Unit | Conditions | |
|---|--|---------|-----------|---------|---|---|
| | Min. | Typ. | Max. | | | |
| Supply Voltage | 1.8/2.5/3.0/3.3/5 | | | V | | |
| Supply Current | - | - | 3.7 | uA | | |
| Frequency | 32.768 | | | KHz | | |
| Initial Frequency Tolerance | - | - | ± 1.5 | ppm | +25°C ± 3 °C | |
| Freq. Stability Vs. Temp. | - | - | ± 5 | ppm | -40°C ~ +85°C | |
| Reflow | - | - | ± 1 | ppm | 1 reflow and measured 24 hours afterwards | |
| Timing error over time [± 5 ppm (-40°C to +85°C)] | ± 0.432 sec/day ; ± 12.960 sec/month ; ± 2.628 minutes / year , w.r.t fo at +25°C. | | | | | |
| CMOS | V _{OH} | VDD-0.4 | - | - | V | LVC MOS Output, Load=15pf |
| | V _{OL} | - | - | 0.4 | V | LVC MOS Output, Load=15pf |
| | Duty Cycle | 40 | - | 60 | % | Measured at 50% of VDD Over -40°C to +85°C. |
| | Rise/Fall Edge | - | - | 100 | ns | Measured at 20% \leftrightarrow 80% of the waveform , 15 pF load. |
| | Load | - | - | 15 | pf | |
| Pad 1 OE Thresholds | V _{ih} = 0.8 * VDD , V _{il} = 0.2 * VDD ; Open connection prohibit | | | | | |
| Supply Sensitivity | - | - | ± 0.2 | ppm | V _{cc} $\pm 5\%$ | |
| Load Sensitivity | - | - | ± 0.2 | | Load $\pm 10\%$ | |
| Aging/ First Year | - | - | ± 3 | | first year at +25° C | |
| All Range of VDD ($\Delta f / V$) | - | - | 0.25 | V | $\Delta V / \Delta t = 1 V / \mu s$ | |
| Supply Voltage Variation (ΔVDD) | - | - | ± 1 | ppm / V | VDD = 1.7 V to 5.5 V | |
| Start - up Time | 1 sec. (max.) at +25°C ; 3 sec. (max.) over -40°C to +85°C | | | | | |

Outline Dimension & Pin Connections


Pad Connections:
 Pad 1 : Output Enable
 Pad 2 : Ground
 Pad 3 : Frequency Output
 Pad 4 : Supply Voltage

Environmental Conditions

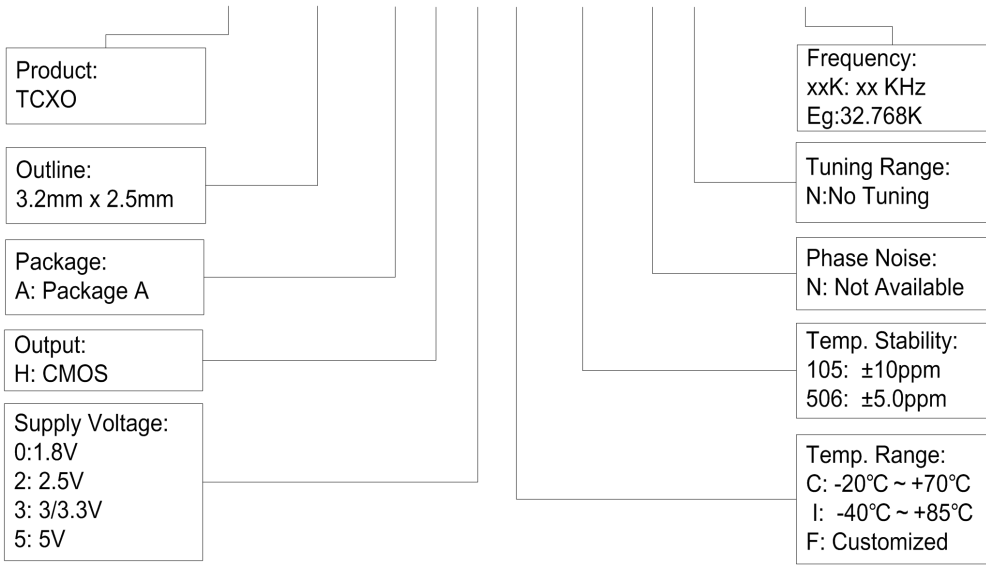
| | |
|-----------------------------|----------------|
| Operating Temperature Range | -40°C ~ +85°C |
| Storage Temperature Range | -50°C ~ +105°C |

Reliability

| Parameter | Condition |
|-------------------------|---|
| Temperature Stress Test | IEC60068, GJB360B |
| Mechanical Stress Test | IEC60068, GJB360B |
| EMC Test (ESD) | IEC61000, JESD22 |
| Solderability | EIA/JESD22-B102-C |
| Contact Pads | Gold over Nickel |
| RoHS | RoHS Directive 2011/65/EU Annex II Recasting 2002/95/EC |

Ordering Guide

BT 3225 A H X X XXX N N 32.768K



Example: BT3225AH3C506NN32.768K