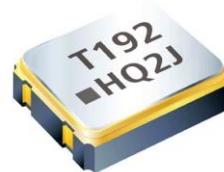


Product Features

1. Ultra low current consumption
2. Ultra small 32.768 KHz RTC Oscillator in seam sealed ceramic package.
3. 4 pads design to achieve good soldering contact on PCB
4. Use AT crystal as the resonator for good temperature performance
5. Tri-State function available for power saving
6. RoHS and REACH Compliant , Pb-free , Halogen-free
7. Industry Standard Package :
2.0 x 1.6 x 0.76 mm

Application :

- Real Time Clock
- System in sleep mode or low energy mode timekeeping



Test condition

Ambient temperature : $25 \pm 5^{\circ}\text{C}$

Relative humidity : 40% ~ 70%

Table 1 . Electrical Specifications

| Parameters | Symbol | Min. | Typ. | Max. | Units | Notes |
|---|---------|-------------|------|--------|--------------------|--|
| Frequency Range and Stability | | | | | | |
| Nominal Frequency | F | 32.768 | | | KHz | |
| Frequency Tolerance | FT | ± 25 | | | ppm | @ $-40\sim 85^{\circ}\text{C}$, Note 1 |
| | | ± 30 | | | | @ $-40\sim 105^{\circ}\text{C}$, Note 1 |
| | | ± 50 | | | | @ $-40\sim 125^{\circ}\text{C}$, Note 1 |
| Operating Temperature Range | | | | | | |
| Operating Temperature | Topr | -40 | 25 | 125 | $^{\circ}\text{C}$ | |
| Supply Voltage and Current Consumption | | | | | | |
| Supply Voltage | Vdd | 1.62 ~ 3.63 | | | V | |
| Current Consumption | Icc | | | 15 | μA | CL=15pF |
| Standby Current | Icc(ST) | - | - | 5 | μA | OE = Low |
| CMOS Type Signal Characteristics | | | | | | |
| Output Load : CMOS | CL | 15 | | | pF | |
| Output Voltage High | VoH | 90%Vdd | - | - | V | |
| Output Voltage Low | VoL | - | - | 10%Vdd | V | |
| Rise Time | Tr | - | - | 20 | ns | 10% → 90% Vdd Level |
| | | - | - | 15 | ns | 20% → 80% Vdd Level |
| Fall Time | Tf | - | - | 20 | ns | 90% → 10% Vdd Level |
| | | - | - | 15 | ns | 80% → 20% Vdd Level |
| Symmetry (Duty ratio) | TH/T | 45 | ~ | 55 | % | |
| Start-up Time | Tosc | - | - | 10 | ms | To 90% of Final Amplitude |

Note 1 : Inclusive of frequency tolerance at 25°C , variation over temperature, supply voltage variation, aging and vibration.

Note 2 : The table shows common spec. if you have special spec. requirement , please feel free to contact our salesperson.

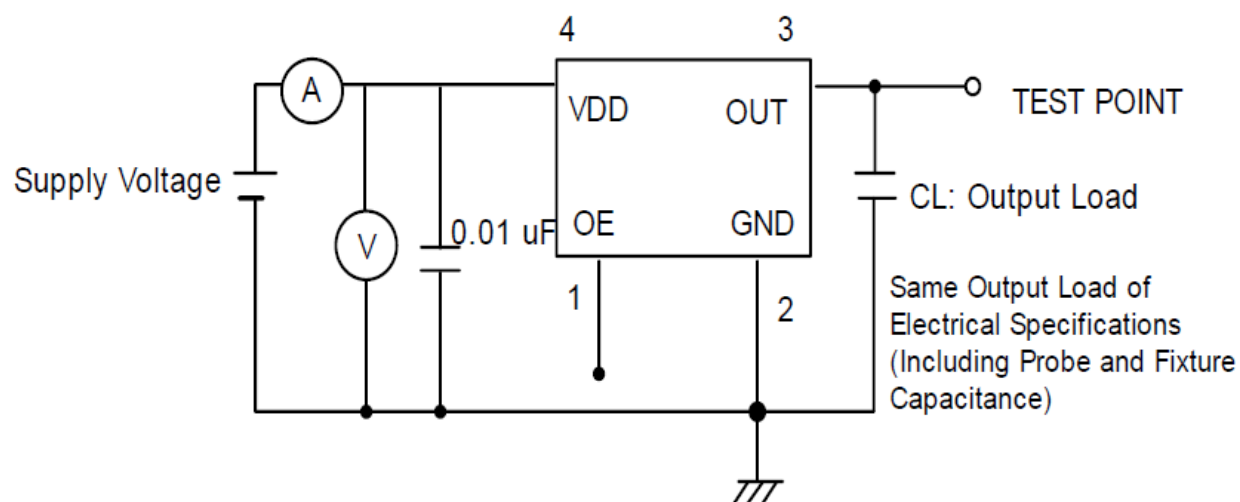
Test condition
Ambient temperature : $25 \pm 5^\circ\text{C}$
Relative humidity : 40% ~ 70%

● **Table 1 . Electrical Specifications (continued)**

| Parameters | Symbol | Min. | Typ. | Max. | Units | Notes |
|---|-----------------|--------------------|------|--------------------|---------|-------------------|
| Enable Pin Control and Input Characteristics | | | | | | |
| Enable Control | - | Yes | | | - | Pad 1 |
| Enable Voltage High | V _{IH} | 70%V _{dd} | - | - | V | |
| Disable Voltage Low | V _{IL} | - | - | 30%V _{dd} | V | |
| Aging Performance | | | | | | |
| Aging | - | ± 3 | | | ppm/yr. | 1st. Year at 25°C |

● **Test Diagram**

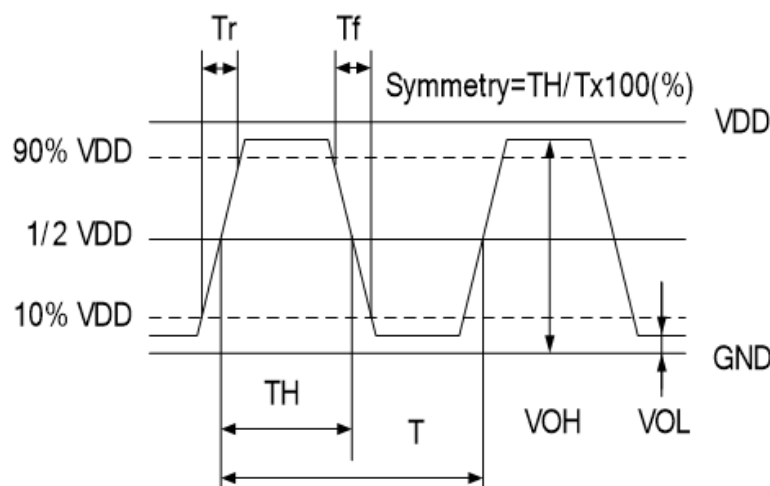
| Pad 1(OE) | Pad 3 (Output) | Oscillator |
|----------------|----------------|------------------|
| High (or open) | OSC out | Normal operation |
| Low | High impedance | Stop oscillation |



Note : TXC sets CL to 15pF for simulation IC load. Customer does not need to layout it in reality circuit.

● **Waveform Conditions**

Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.



● **Dimensions & Footprint (Recommended)**

Unit : mm

