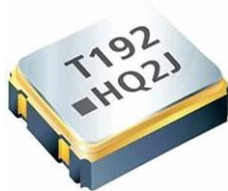


Product Features

- 1. KHz crystal oscillator in SMD seam sealed ceramic package
- 2. 4pads design to achieve good soldering contact on PCB
- 3. AT fundamental solution provides good frequency stability
- 4. Tri-State function available for power saving
- 5. Supply voltage range : 1.6V ~ 3.63V
- 6. AEC-Q100 , RoHS and REACH Compliant , Pb-free , Halogen-free
- 7. Industry Standard Package :
2.5 x 2.0 x 0.8 mm

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



Test condition
Ambient temperature : 25 ± 5°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 Stability	ST	± 25			ppm	@ -40~85°C , Note 1
		± 30				@ -40~105°C , Note 1
		± 50				@ -40~125°C , Note 1
Operating Temperature Range						
Operating Temperature	Topr	-40	25	125	°C	
Supply Voltage and Current Consumption						
Supply Voltage	Vdd	1.62 ~ 3.63			V	
Current Consumption	Icc	-	-	0.5	mA	
Standby Current	Icc(ST)	-	-	10	uA	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	-	-	3	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 ± 5°C

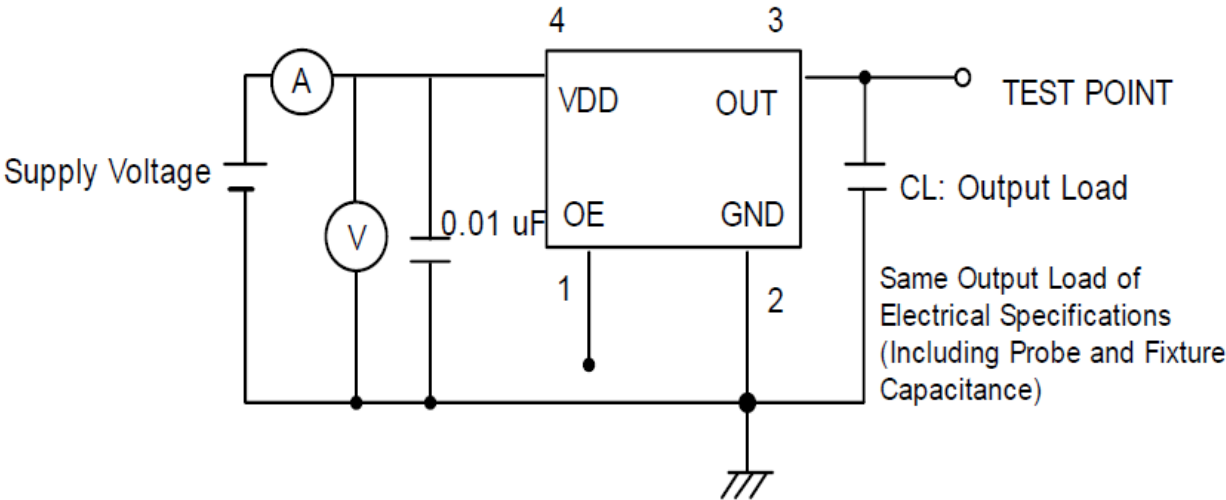
Relative humidity : 40% ~ 70%

● 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	VIH	70%Vdd	-	-	V	
Disable Voltage Low	VIL	-	-	30%Vdd	V	
Aging Performance						
Aging	-	± 3			ppm/yr.	1st. Year at 25°C

● Test Diagram

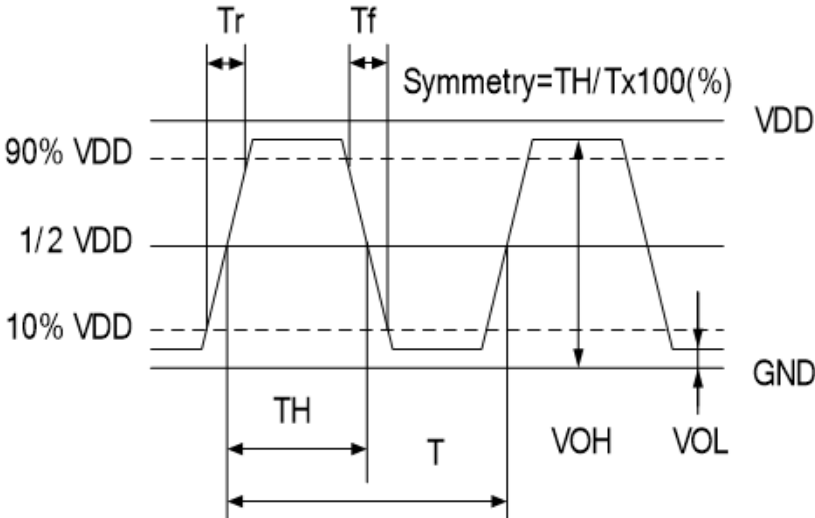
Pad 1(OE)	Pad 3 (Output)	Oscillator
High (or open)	OSC out	Normal operation
Low	High impedance	Stop oscillation



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

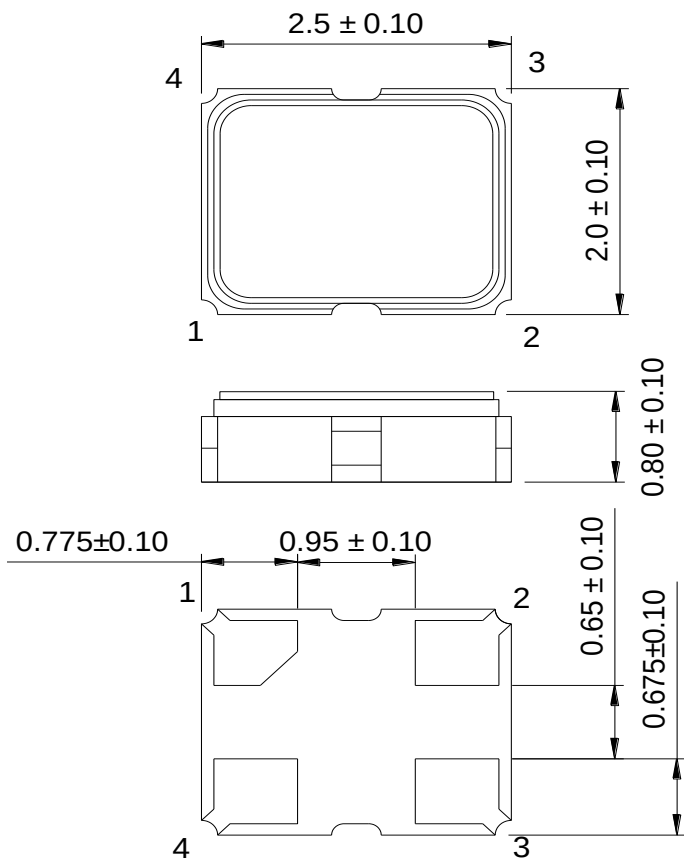
● Waveform Conditions

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



● Dimensions & Footprint (Recommended)

Unit : mm



- PAD FUNCTION:
- 1: ENABLE/DISABLE
 - 2: GND
 - 3: OUTPUT
 - 4: VDD

