



RFM Integrated Device, Inc.

PRODUCT SPECIFICATION

Part Number: XTC4004

TCXO, 32.768 KHz, +/- 1.5
ppm max @ 25°C +/- 3°C

SMD 3.2x2.5 32.768KHz TCXO

Features:

- Miniature SMD Package
- Moisture Sensitivity Level: 2



Description and Applications:

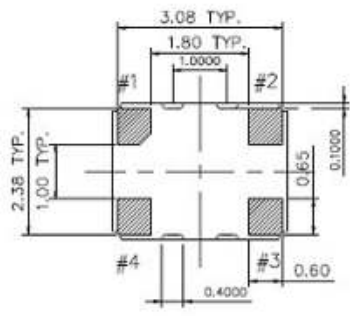
Surface mount 3.2mmx2.5mm TCXO

Electrical Specifications:

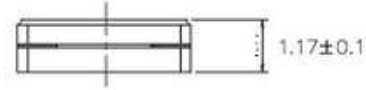
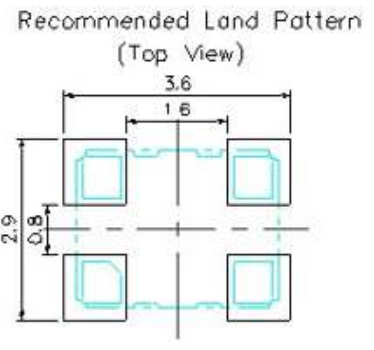
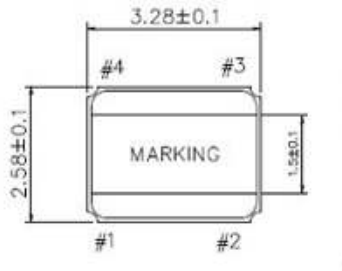
| XTC4004 | Specifications |
|--|---|
| Nominal Frequency, Fo | 32.768 KHz |
| Storage Temperature Range | -55°C to +85°C |
| Operating Temperature Range | -40°C to +85°C |
| Power Supply Voltage, Vdd | 3.3V +/- 5% |
| Output Waveform | CMOS Square Wave |
| Output Load | 15pF |
| “0” Level “1” Level | 0.4V max I _{OL} =0.1mA V _{dd} -0.4V min I _{OH} =-0.1mA |
| Power Supply Current, I _{cc} | 1uA typical 2uA max without load |
| Initial Frequency Tolerance | +/- 1.5 ppm max @ 25°C +/- 3°C |
| Duty Cycle | 40% ~ 60% Typical |
| Rise Time (20% -> 80% of final RF level in V _{p-p}) Fall Time (80% -> 20% of final RF level in V _{p-p}) | 100 nsec max. 100 nsec max. |
| Frequency Stability a. Vs. Temperature (-40~85°C) b. Vs. Load varied 15pF +/-10% c. Vs. Supply Voltage Delta Freq/V | +/- 5 ppm +/- 0.2 ppm +/- 1 ppm/V |
| Timing error over time | +/-0.432 sec/day max per day +/-12.960 sec/month max per month +/-2.628 min/year max per year |
| Supply Voltage Variation | 0.25 V max |
| Reflow | +/-1 ppm max |
| Start –Up Time | 1 s max @ 25°C, 3 s max over-40°C to +85°C |
| Aging | +/-3 ppm per years |

| | |
|--|-------------|
| Tri-State | |
| Enable Voltage (High) | 80% Vdd min |
| Disable Voltage (Low) output Tri-state | 20% Vdd max |
| Open | Forbidden |

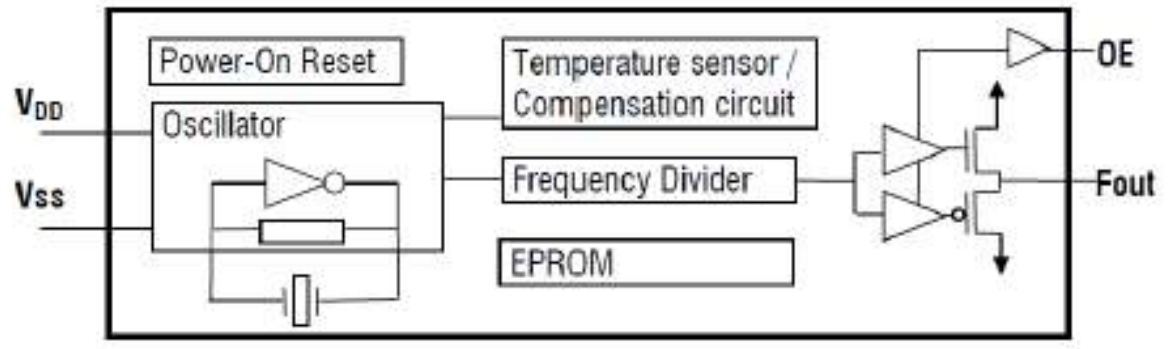
Mechanical Dimensions (mm):



| | |
|-------|----------------|
| Pin 1 | Output Enable |
| Pin 2 | Ground |
| Pin 3 | Frequency out |
| Pin 4 | Supply Voltage |

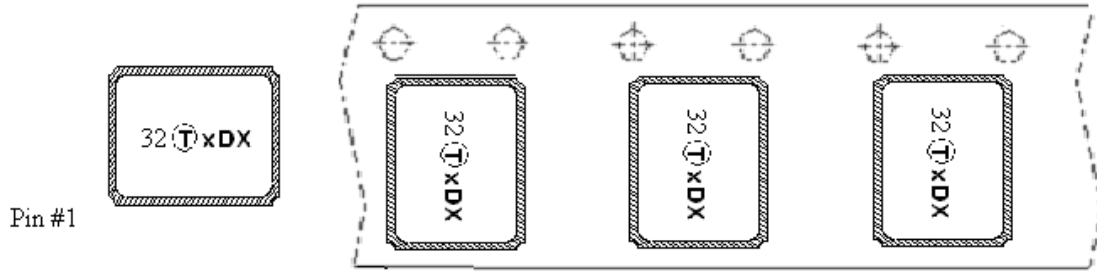


Block Diagram



Marking:

Line 1: 32 + Product Code + Date Code + Traceability code (1 or 2 letters)



Product Code Table

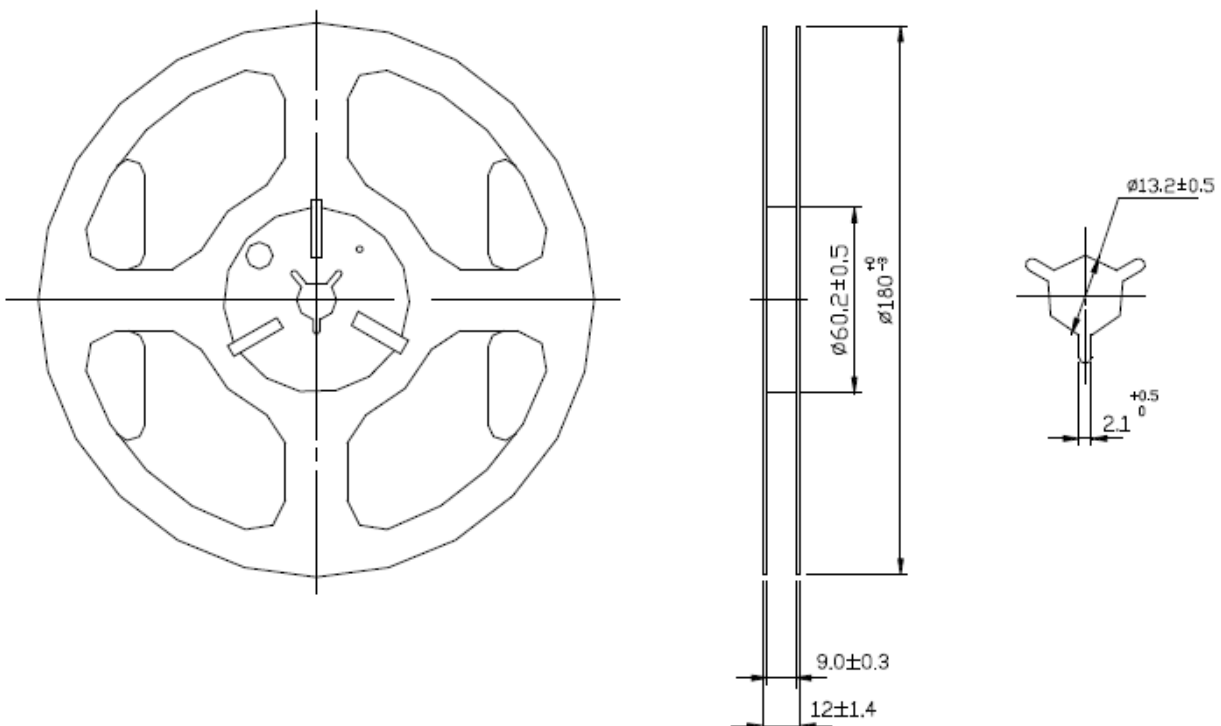
| Year | 2005 | 2006 | 2007 | 2008 |
|--------------|------|------|----------|----------|
| | 2009 | 2010 | 2011 | 2012 |
| | 2013 | 2014 | 2015 | 2020 |
| Product Code | X | x | <u>X</u> | <u>X</u> |

Date Code Table

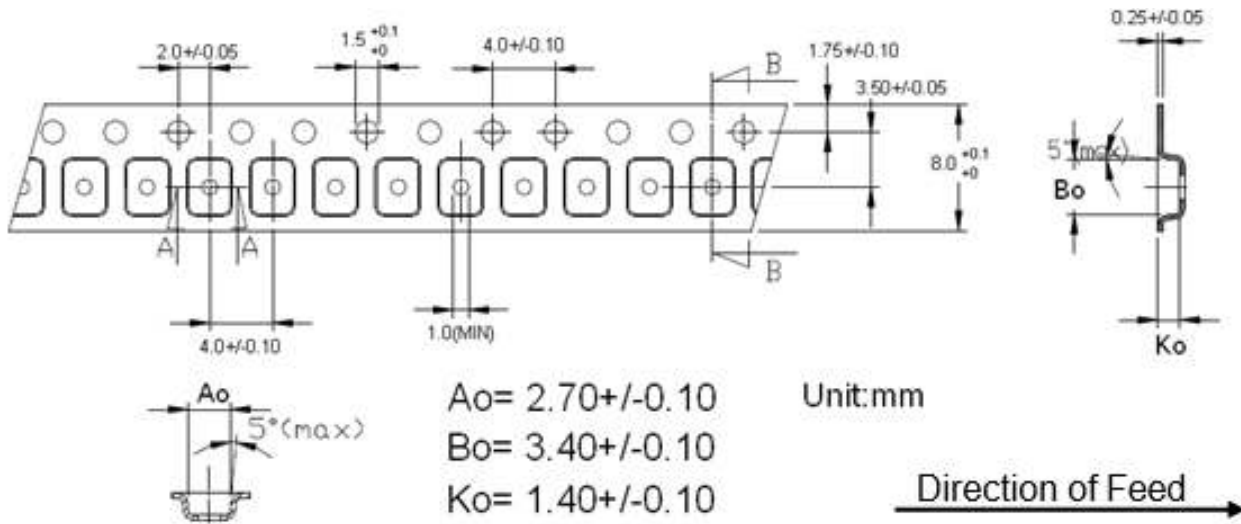
| Date Code Table | | | | | | | | | | | | |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| WK01 | WK02 | WK03 | WK04 | WK05 | WK06 | WK07 | WK08 | WK09 | WK10 | WK11 | WK12 | WK13 |
| A | B | C | D | E | F | G | H | I | J | K | L | M |
| WK14 | WK15 | WK16 | WK17 | WK18 | WK19 | WK20 | WK21 | WK22 | WK23 | WK24 | WK25 | WK26 |
| N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| WK27 | WK28 | WK29 | WK30 | WK31 | WK32 | WK33 | WK34 | WK35 | WK36 | WK37 | WK38 | WK39 |
| a | b | c | d | e | f | g | h | i | j | k | l | m |
| WK40 | WK41 | WK42 | WK43 | WK44 | WK45 | WK46 | WK47 | WK48 | WK49 | WK50 | WK51 | WK52 |
| n | o | p | q | r | s | t | u | v | w | x | y | z |

Packing (mm):

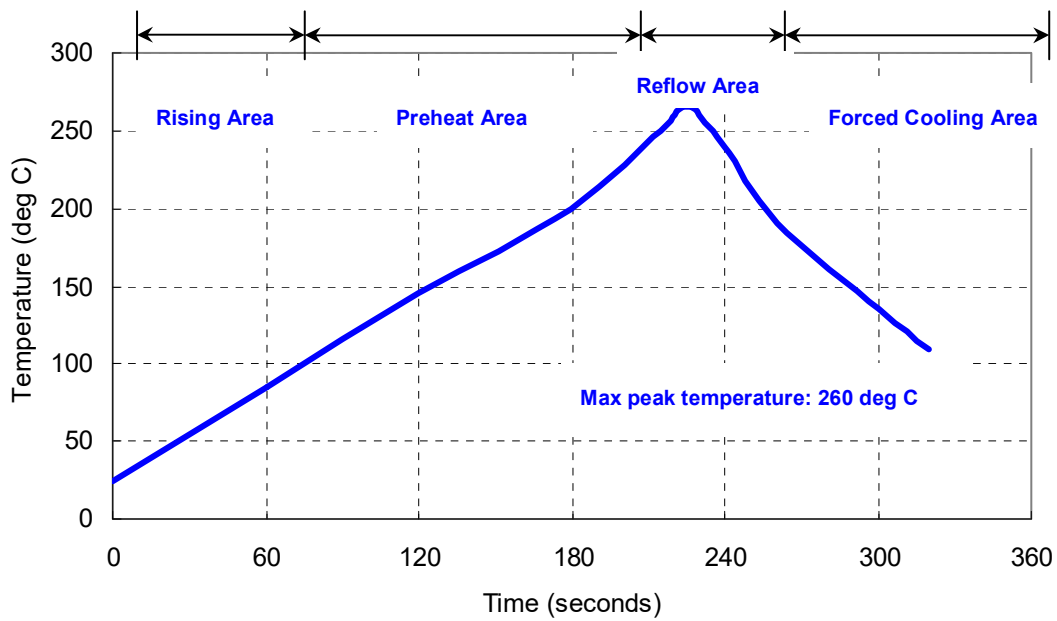
1. Reel Dimension



2. Tape Dimension



Reflow Profile:



Notes of the Usage:

1. Touch the solder iron at 260 ± 5 deg C onto the leads for 10 ± 2 sec max or touch the solder at 350 ± 5 deg C onto the leads for 3 ± 0.5 sec.
2. In the customer's reflow process, if it will remain some mechanical stress at the soldering terminals, also make some cracks on the soldering termination. Some cracks will cause open or short circuit and cause of thermal increasing or smoking. Don't make any excess mechanical stress to soldering points.
3. In case of giving a heavy shock to the products, it may make an open or short circuit and cause of thermal increasing and smoking. To avoid heavy shock impact applying to products is strictly required.
4. Ultrasonic cleaning should be avoided to prevent damage to the TCXO.
5. Do Not Use Ultrasonic-Wave Soldering or Wave Solder with Package Immersed in Solder.

Notes of the Storage:

1. To keep products under the condition at the room temperature ($-5 \sim 35$ deg C) with normal humidity (45~75%). Absorption of moisture and dewdrop may make inferiority of characteristics and a short circuit.
2. Oxidization of terminals shall make the solderability more inferior. Dusts and corrosive gas will make a cause of the open or short circuit. Keep it in the clean place where is not in dusty and no corrosive gas.
3. Use the anti-static material to the storage package.
4. Don't put any excess weight to the TCXO in the storage process.
5. Don't move the product from the cold place to the hot place in the short time, otherwise it may make some dew-drop, then a short circuit may happen in case.
6. Storage periods should be maximum 6 months under condition of above item 1 after delivery from the factory.
7. Once open the bag, there is possibility of electrical characteristics deterioration due to absorption of moisture. So, please use parts within 7 days after opening the bag.
8. If you have to keep parts without using after opening the bag, please put the drying agent in the bag, fold the bag and keep it in the place where temperature and humidity are controlled (nitrogen atmosphere box etc.)