Fuel The Digital World

# QTT252

## Temperature Compensated Crystal Oscillator

## Features

- Frequency range : 10MHz to 70MHz
- SMD seam sealing ceramic package
- Supply voltage : 1.8V ~ 3.3V
- Clipped Sinewave output
- Low power consumption
- Voltage control function available
- External dimensions (mm)
  L : 2.5 x W : 2.0 x H : 0.8
- RoHS compliant & Pb free

## Applications

- Mobile communications
- GNSS
- Smartphone, Mobile phone
- Wearables
- IoT devices
- Portable radio communications

## Electrical Characteristics

| Item | | QTT252 | Conditions |
|---|---|---|---|
| Nominal Frequency Range ($F_0$) | | 10MHz ~ 70MHz | |
| Frequency Tolerance ($F_{tol}$) | | ±2.0 ppm Max. | Note [1] |
| Frequency Stability | vs Temperature | ±0.5ppm, ±2.0ppm | -30°C~+85°C, Note [2] |
| | | ±1.0ppm | -40°C~+85°C, Note [2] |
| | vs Load | ±0.2 ppm Max. | Load ±10% |
| | vs Supply Voltage | ±0.2 ppm Max. | $V_{DD}$ ±5% |
| Operating Temperature Range ($T_{OTR}$) | | -30°C ~ +85°C | |
| | | -40°C ~ +85°C | |
| Supply Voltage ($V_{DD}$) | | 1.8V, 2.5V, 3.3V | |
| Current Consumption ($I_{DD}$) | | 2.0 mA Max. | |
| Output Type | | Clipped Sinewave | |
| Output Load | | 10kΩ // 10pF | |
| Output Level | | 0.8 V(p-p) Min. | Note [3] |
| Start-up Time | | 5 ms Max. | |
| Auto Frequency Control (AFC) Range | | ±7ppm ~ ±16ppm | VCTCXO, optional, Note [4] |
| Phase Noise | | -135 dBc/Hz Typ. | at 1kHz offset |
| Aging ($F_{aging}$) | | ±1 ppm Max. | at 25°C, first year |
| Storage Temperature Range ($T_{STR}$) | | -55°C ~ +125°C | |

**Notes:**

[1] Refer to nominal frequency after 2 times of reflow at 25°C.

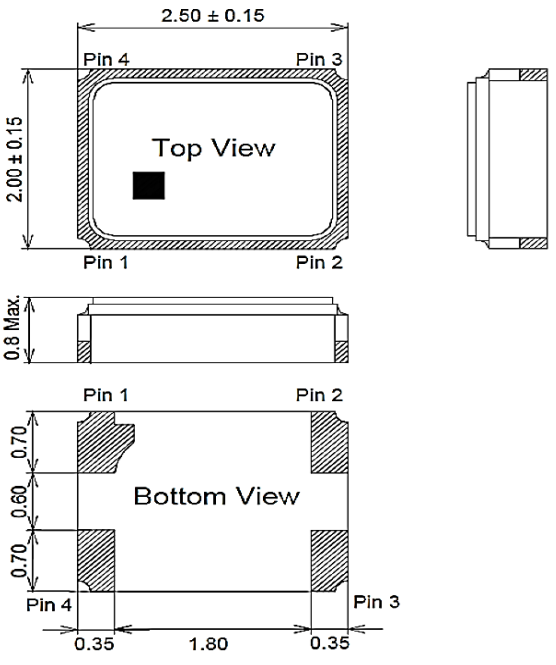
[2] Refer to frequency at 25°C±2°C.

[3] Decoupling capacitor is required in external circuit.

[4] If supply voltage $V_{DD}$ = 3.3V or 2.5V, control voltage $V_{con}$ = 0.5*$V_{DD}$ ± 1.0V.
If supply voltage $V_{DD}$ = 1.8V, control voltage $V_{con}$ = 0.5*$V_{DD}$ ± 0.8V.

# QTT252
## Temperature Compensated Crystal Oscillator

## Dimensions

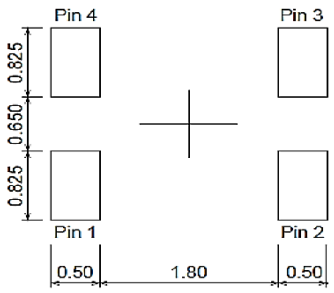



n)

**Pin function**

| Pin | Function | |
|---|---|---|
| | TCXO | VCTCXO |
| 1 | GND or NC | AFC |
| 2 | GND | |
| 3 | OUTPUT | |
| 4 | $V_{DD}$ | |

**Recommended pad layout**




## Ordering Information

**QTT252 - 26.000M B G - T**

**Frequency in Hz**

Please contact us for available frequencies

**Packaging Method**

| | |
|---|---|
| T | Tape & Reel |

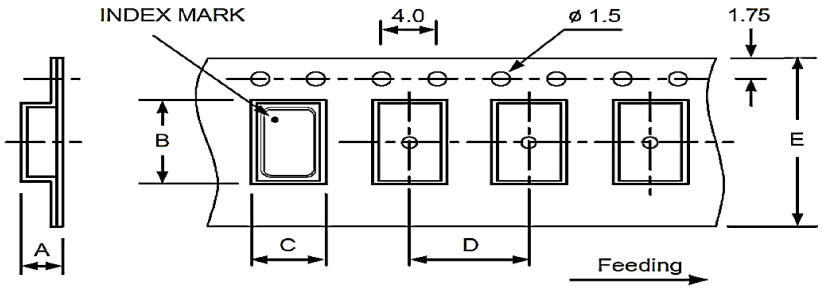
**Supply Voltage**

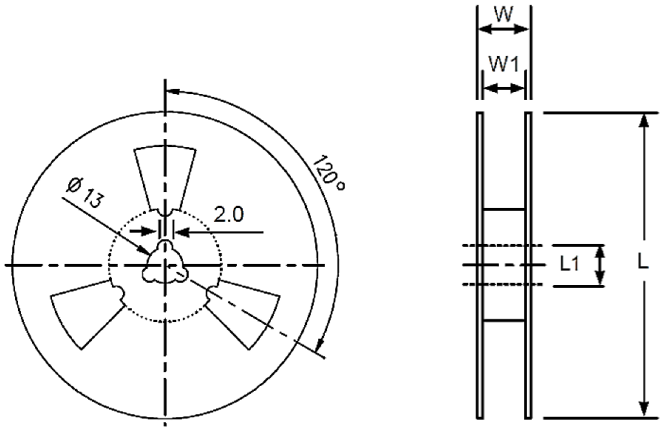
| | |
|---|---|
| B | 3.3 V |
| C | 2.5 V |
| D | 1.8 V |

**Frequency Stability (over Temp.)**

| | | |
|---|---|---|
| N | ± 2.0 ppm ( -30˚C ~ +85˚C ), | TCXO |
| S | ± 2.0 ppm ( -30˚C ~ +85˚C ), | VCTCXO |
| G | ± 0.5 ppm ( -30˚C ~ +85˚C ), | TCXO |
| V | ± 0.5 ppm ( -30˚C ~ +85˚C ), | VCTCXO |
| I | ± 1.0 ppm ( -40˚C ~ +85˚C ), | TCXO |

## Packing



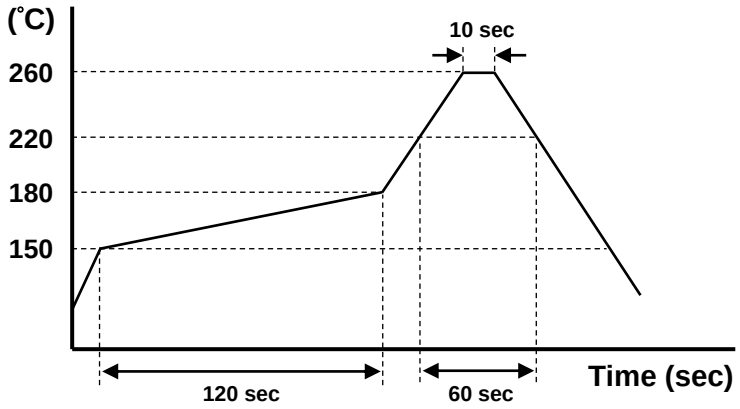




| DIMENSIONS | A | B | C | D | E | L | L1 | W | W1 |
|---|---|---|---|---|---|---|---|---|---|
| | 1.15 | 2.70 | 2.25 | 4.00 | 8.00 | 178 | 13.0 | 11.6 | 8.4 |

(Unit: mm)

## Reflow Profile

Solder melting point : 220˚C, 60 sec. Min., 200 sec. Max.
Peak temperature : 260˚C, 10 sec. Min., 30 sec. Max.



# Mouser Electronics

Authorized Distributor

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TXC Corporation:

QTT252-38.400MBG-T QTT252-38.400MBN-T QTT252-38.400MDN-T QTT252-40.000MDN-T QTT252-19.200MCS-T QTT252-26.000MCS-T QTT252-60.000M-SPX QTT252-38.400MDG-T QTT252-19.200MBS-T QTT252-40.000MBG-T QTT252-40.000MDG-T QTT252-19.200MCV-T QTT252-40.000MBS-T QTT252-16.369MDG-T QTT252-38.400MBS-T QTT252-26.000MBN-T QTT252-32.000MBI-T QTT252-16.368MBG-T QTT252-19.200MDG-T QTT252-16.368MBN-T QTT252-19.200MBG-T QTT252-25.000MBS-T QTT252-50.000MBS-T QTT252-19.200MBN-T QTT252-16.369MBN-T QTT252-25.000MBG-T QTT252-26.000MBS-T QTT252-50.000MBG-T QTT252-16.369MBG-T QTT252-50.000MBN-T QTT252-26.000MDG-T QTT252-25.000MBN-T QTT252-32.000MBN-T QTT252-26.000MBG-T QTT252-24.000MDN-T