

TV Type Voltage Controlled Temperature Compensated Crystal Oscillator

FEATURE

1. Typical 5.0 x 3.2 x 1.15mm SMD.
2. VC-TCXO for personal cellular phone.
3. For automatic assembly.
4. Compactness and light weight.
5. Low power consumption.
6. VCTCXO available.
7. Packing: Tape & Reel, 1000/2000/3000/5000 pcs per Reel, 1~99 pcs per Bulk/Tape.

RoHS Compliant Standard



Actual Size

ORDERING INFORMATION

| T | V | E | C | D | D | S | - | N | F | - | ? | | |
|------|--------------|--------------------|--|---|--|--|------------------|---------------------------------|------|------------|-------------------|------|------------|
| TCXO | Package (mm) | Supply Voltage(V) | Pulling Range (ppm) | | Freq. Stability (ppm) | | Temp. Range (°C) | Output Logic and Symmetry | Dash | Appearance | Lead Free | Dash | Freq.(MHz) |
| | 5x3.2 | C: 5 E: 2.8~3.3 | A:±5 E:±15 B:±8 F:±20 C:±10 G:±25 D:±12 T:TCXO Vcon Range: 0.5V to 2.5V | | A: ±0.5 D: ±2.5 B: ±1.0 E: ±3.0 P: ±1.5 F: ±4.0 C: ±2.0 G: ±5.0 | B: 0~+55 I: -10~+60 C: -20~+70 D: -30~+85 L: -40~+85 | | S: Clipped Sine Wave @10KΩ/10pF | | N: Normal | F: RoHS Compliant | | xx.xxxxxx |

Ordering Example: TVECDDDS-NF-13.000000 MHz

VCTCXO V-TYPE; V_{DD}:3.3V; Pulling Range: ±10ppm; Freq. Stability: ±2.5ppm; Temp. Range: -30°C to +85°C; Clipped Sine Wave; Nomal Appearance; Lead Free; Freq. 13.000000MHz.

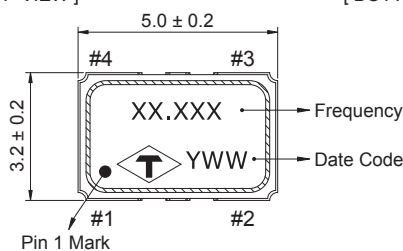
FREQ. STABILITY vs. TEMP. RANGE

| Temp.(°C) | ppm | A: ±0.5 | B: ±1.0 | P: ±1.5 | C: ±2.0 | D: ±2.5 |
|-----------|----------|---------|---------|---------|---------|---------|
| B | 0~ +55 | ○ | ○ | ○ | ○ | ○ |
| I | -10~ +60 | △ | ○ | ○ | ○ | ○ |
| C | -20~ +70 | △" | ○ | ○ | ○ | ○ |
| L | -40~ +85 | △" | ○ | ○ | ○ | ○ |

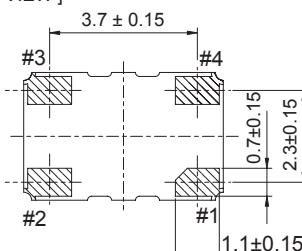
○:Standard △:Available (case by case) ×:Not available
" 10 ~26 MHz available.

OUTLINE DRAWING

[TOP VIEW]

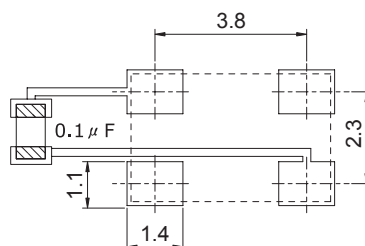
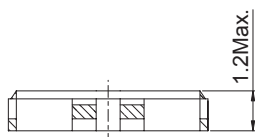


[BOTTOM VIEW]



| Pin | Function |
|-----|-----------------|
| #1 | VCON:VC-TCXO |
| | GND:TCXO |
| #2 | GND |
| #3 | OUTPUT |
| #4 | V _{DD} |

[SIDE VIEW]



UNIT : mm

Recommended soldering pattern

VCTCXO / TCXO

ELECTRICAL SPECIFICATION

| Parameter | Min. | | Max. | | Unit |
|--|---|------|------|------|------------------|
| | | | | | |
| | 5.0 | 2.8 | 5.0 | 2.8 | V |
| Supply Voltage Variation(V_{DD}) 5% | 4.75 | 2.66 | 5.25 | 2.94 | V |
| Frequency Range | 10 | | 40 | | MHz |
| Standard Frequency | 13.0、14.4、16.3676、16.8、19.2、19.68、20.0、26.0 | | | | |
| Operating Temp. Range | Refer to Ordering Information | | | | °C |
| Frequency Stability | Refer to Ordering Information | | | | ppm |
| Frequency Stability | | | | | |
| Vs Supply Voltage(±5%) change | — | | ±0.2 | | ppm |
| Vs Load(±10%) change | — | | ±0.2 | | |
| Vs Aging | — | | ±1.0 | | ppm/year |
| Supply Current | | | | | |
| 10.000MHz ≤ F _o < 15.000MHz | — | | 1.5 | | mA |
| 15.000MHz ≤ F _o < 26.000MHz | — | | 2.0 | | |
| 26.000MHz ≤ F _o < 40.000MHz | — | | 2.5 | | |
| Output Level (Clipped Sine Wave) | 0.8 | | — | | V _{p-p} |
| Load | 10KΩ//10pF | | | | |
| Vc Input Impedance | 1.0 | | — | | MΩ |
| Phase Noise @13.0MHz | | | | | |
| 100Hz | | | -115 | | dbc/Hz |
| 1KHz | | | -135 | | |
| 10KHz | | | -148 | | |
| Start Time | — | | 2 | | mSec |
| Storage Temp. Range | -55 | | 125 | | °C |

*36.000 ~ 40.000 MHz only for VDD = 2.8 ~ 3.3V.