1. Device Name VC-TCXO
2. Model Name DSA321SCL
3. Nominal Frequency 24.000 MHz
4.Mass 0.03g max.

5. Absolute Maximum Ratings

| | Item | Symbol | Rating | unit |
|---|---|---|---|---|
| 1 | Supply Voltage | $V_{CC}$ | -0.3 ~ +4.6 | V |
| 2 | Storage Temperature Range | $T_{STG}$ | -40 ~ +85 | °C |

6. Recommended Operating Conditions

| | Item | Symbol | min. | typ. | max. | unit |
|---|---|---|---|---|---|---|
| 1 | Supply Voltage | $V_{CC}$ | +2.85 | +3.0 | +3.15 | V |
| 2 | Load Impedance (resistance part) | $L_{OAD}$_R | 9 | 10 | 11 | kΩ |
| | (parallel capacitance) | $L_{OAD}$_C | 9 | 10 | 11 | pF |
| 3 | Control Voltage Range | $V_{CONT}$ | +0.5 | +1.5 | +2.5 | V |
| 4 | Operating Temperature Range | $T_{_OPR}$ | -40 | - | +85 | °C |

7. Electrical Characteristics

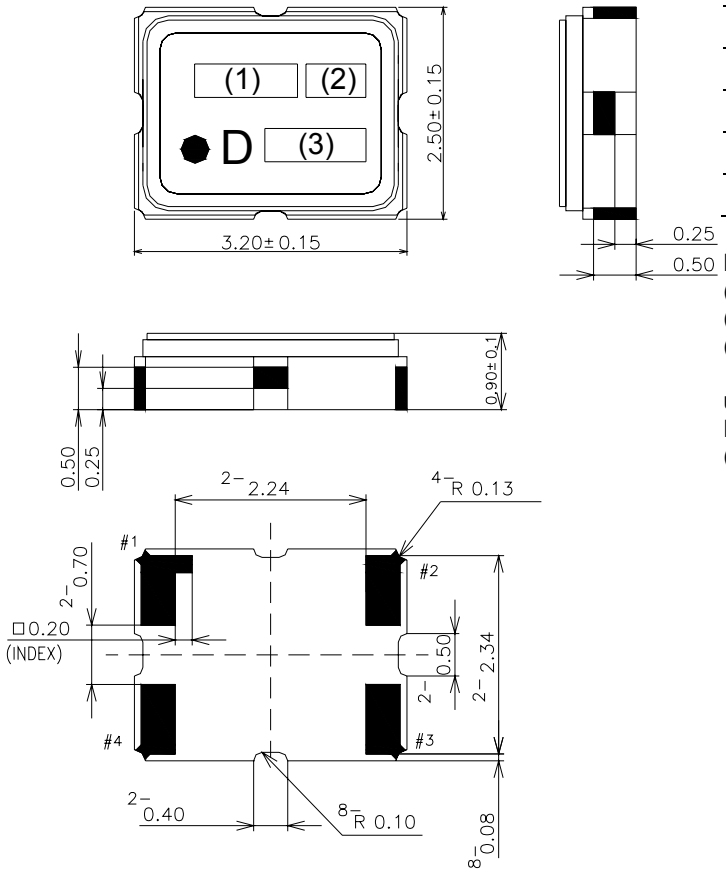
($T_A$ =-40 ~ +85°C, $L_{OAD}$_R//C =10kΩ//10pF, $V_{CC}$=+3.0V,$V_{CONT}$=+1.5V, unless otherwise noted)

| | Item | Conditions | Limits | | | unit | Notes |
|---|---|---|---|---|---|---|---|
| | | | min. | typ | max. | | |
| 1 | Current Consumption | | - | - | 2.0 | mA | |
| 2 | Output Level | | 0.8 | - | - | $V_{P-P}$ | 1 |
| 3 | Symmetry | GND level (DC cut) | 40/60 | - | 60/40 | % | |
| 4 | Frequency Stability<br>1.Tolerance | After 2 times reflow<br>Ref. to Nominal Frequency | - | - | ±1.5 | ppm | 2 |
| | 2.vs Temperature | $T_A$ =-40~+85 °C<br>Ref. to Frequency ($T_A$=+25°C) | - | - | ±2.5 | ppm | |
| | 3.vs Supply Voltage | $V_{CC}$=+3.0V±5% | - | - | ±0.2 | ppm | |
| | 4.vs Load Variation | $L_{OAD}$_R//C= (10kΩ//10pF) ±10% | - | - | ±0.2 | ppm | |
| | 5.vs Aging | $T_A$= Room ambient | - | - | ±1.0 | ppm/year | |
| 5 | Start Up | @90% of final Vout level | - | - | 2.0 | ms | |
| 6 | Frequency Control<br>1.Control Range | $V_{CONT}$=+0.5V~+2.5V(Ref.+1.5V) | ±9 | - | ±15 | ppm | 3 |
| | 2.Input Resistance | | 500 | - | - | kΩ | |
| 7 | SSB Phase Noise | Relative to f0 level Offset 1kHz | - | - | -130 | dBc/Hz | |

Notes
1. Clipped sine wave (DC-coupled)
2. Please leave after reflow in 2h or more at room ambient.
3. Positive slope (Frequency becomes high in proportion to frequency control voltage.)

## 8. Outline, Pin Connections

Outline



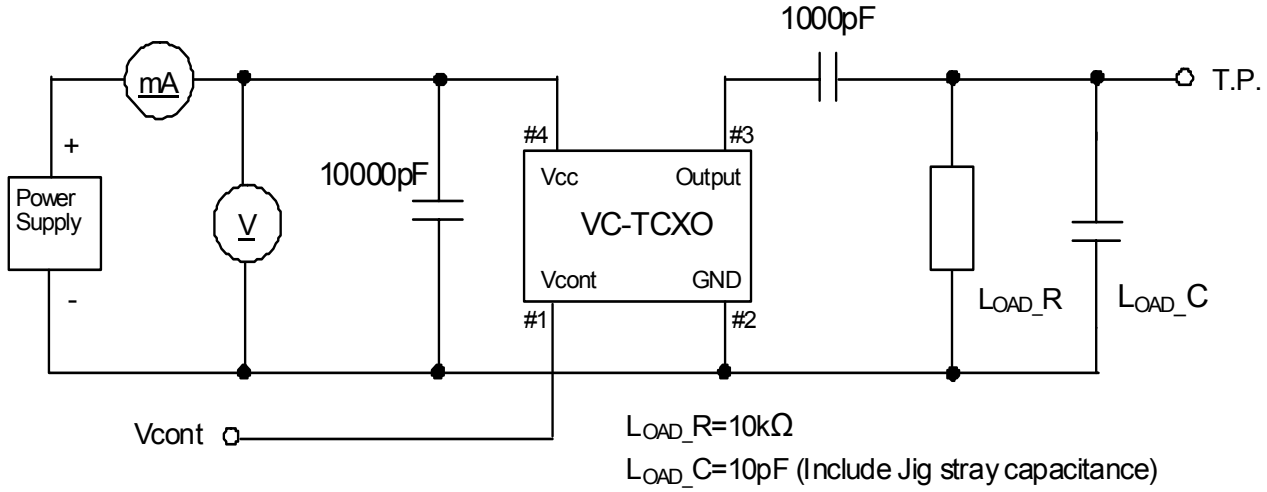

Pin Connections

| Pin No. | Connection |
|---|---|
| #1 | Vcont |
| #2 | GND |
| #3 | Output |
| #4 | $V_{CC}$ |

Marking
(1) Frequency 24.00 (MHz, 4digits)
(2) Model code Y
(3)EIA Date code Year (1digit) +Week (2digits)
e.g. 2010/1/1 → 001

unit: mm
Dimensional Tolerance: ±0.15
(Unless otherwise noted)

## 9. Measurement Circuit




$L_{OAD}$_R=10kΩ
$L_{OAD}$_C=10pF (Include Jig stray capacitance)

| TITLE | Remark | | |
|---|---|---|---|
| VC-TCXO SPECIFICATION | | | |
| Date | Spec. No. | Rev. | Page |
| 2010/11/09 | ZC05888 | - | 2/2 |