1. Device Name VC-TCXO
2. Model Name DSA321SDN
3. Nominal Frequency 38.400 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 | $V_{CC}$ | +3.135 | +3.3 | +3.465 | 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 | $T_{_OPR}$ | -30 | - | +85 | °C |

7. Electrical Characteristics

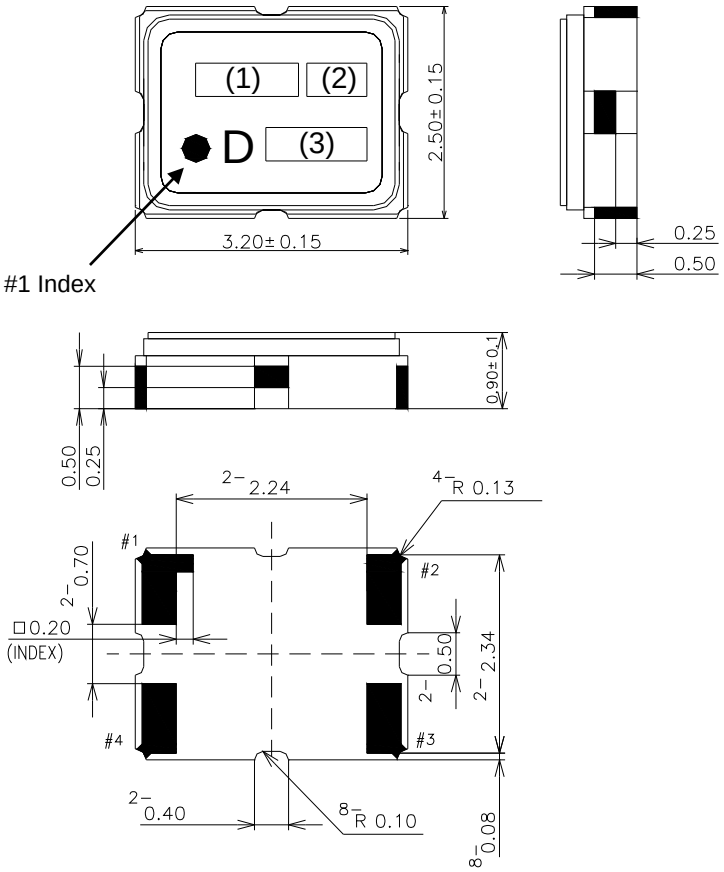
($T_A$=-30~+85°C, $L_{OAD}$_R//C=10kΩ//10pF, $V_{CC}$=+3.3V, $V_{CONT}$=+1.5V, unless otherwise noted)

| | 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 | | | | | | |
| | 1.Tolerance | After 2 times reflow<br>Ref. to nominal frequency | - | - | ±1.0 | ppm | 2,3 |
| | 2.vs Temperature | $T_A$=-30~+85°C<br>Ref. to frequency ($T_A$=+25°C) | - | - | ±0.5 | ppm | |
| | 3.vs Supply Voltage | $V_{CC}$=+3.3V±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 Time | @90% of final Vout level | - | - | 2.0 | ms | |
| 6 | Frequency Control | | | | | | |
| | 1.Control Range | $V_{CONT}$=+1.5V±1.0V | ±9 | - | ±15 | ppm | 4 |
| | 2.Input Resistance | | 500 | - | - | kΩ | |
| 7 | SSB Phase Noise | Relative to f0 level offset 100Hz | - | - | -100 | dBc/Hz | |
| | | Relative to f0 level offset 1kHz | - | - | -125 | dBc/Hz | |
| | | Relative to f0 level offset 10kHz | - | - | -145 | dBc/Hz | |
| | | Relative to f0 level offset 100kHz | - | - | -150 | dBc/Hz | |
| | | Relative to f0 level offset 1MHz | - | - | -150 | dBc/Hz | |
| | | Relative to f0 level offset 10MHz | - | - | -150 | dBc/Hz | |

Notes
1. Clipped sine wave (DC-coupled)
2. $T_A$=+25°C
3. Please leave after reflow in 2h or more at room ambient.
4. Positive slope (Frequency becomes high in proportion to frequency control voltage.)

## 8. Outline, Pin Connections

Outline




Pin Connections

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

Marking

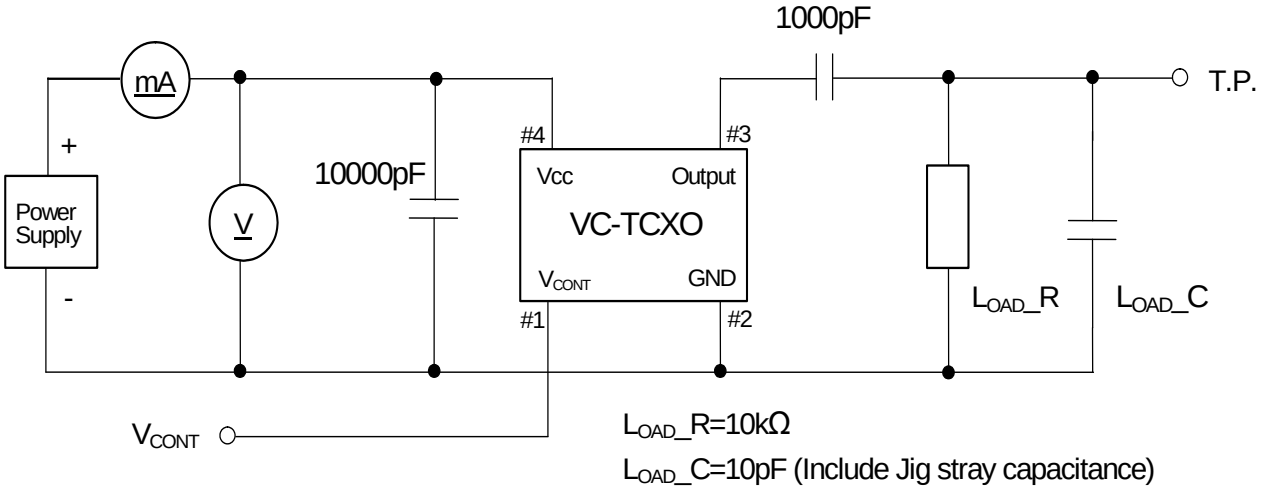
| | |
|---|---|
| (1) Frequency | 38.40 (MHz, 4digits) |
| (2) Model code | AN |
| (3) Date code | Year (1digit) +Week (2digits) |
| | e.g.2018/01/01→ 801 |

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 | | |
|---|---|---|---|
| DSA321SDN TYPE SPECIFICATION | | | |
| Date | Spec. No. | Rev. | Page |
| 2018/09/13 | ZZ08490 | - | 2/2 |