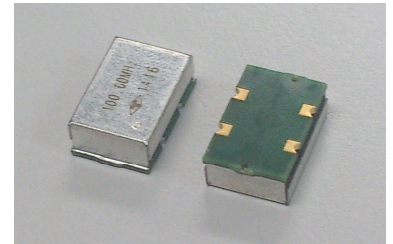


# High Frequency Very Low Noise VCXO VLCU-Type series

## VLCU-Type Series in 14 x 9mm SMD package

VLCU-Type series is a high frequency high performance VCXO offering high frequency and very low phase noise. The part comes in a small SMD package which makes it suitable for reflow soldering during pick and place assembly.



### FEATURES

- **Low Phase Noise**
- Small SMD Package
- Low Power Consumption

### APPLICATIONS

- Instrument
- Microwave Communication
- Test & Measurement
- Telecom Systems
- Satellite Communication

**RoHS Compliant Standard**

## ELECTRICAL SPECIFICATIONS

### 1. OUTPUT (PIN = "R.F. OUTPUT")

|      | Parameter                       | Min.                           | Typ.     | Max.     | Unit   | Test Condition   |
|------|---------------------------------|--------------------------------|----------|----------|--------|--|
| 1.1. | Frequency (Fo)                  | 50                             |          | 125      | MHz    | Standard Frequency : 100MHz, 122.88MHz, 125MHz   |
| 1.2. | Frequency Stability (Overall)   | -35                            |          | +35      | ppm    | Frequency stability includes frequency tolerance@25°C and frequency stability vs. operating temperature range and voltage variance and 15 years aging. |
| 1.3. | Operating Temperature Range     | -20°C ~ +70°C<br>-40°C ~ +85°C |          |          | °C     |  |
| 1.4. | Storage Temperature Range       | -45°C ~ +90°C                  |          |          | °C     |  |
| 1.5. | Waveform                        | Sine wave                      |          |          |        |  |
| 1.6. | Level                           | +8                             |          |          | dBm    |  |
| 1.7. | Load                            |                                | 50       |          | Ω      |  |
| 1.8. | Harmonics                       |                                |          | -22      | dBc    |  |
| 1.1. | Phase Noise (Max.) (Fo =100MHz) | Option A                       | Option B | Option C |        |  |
| 1.2. |                                 | -84                            | -87      | -90      | dBc/Hz | @ 10Hz   |
| 1.3. |                                 | -117                           | -120     | -123     | dBc/Hz | @ 100Hz  |
| 1.4. |                                 | -143                           | -144     | -145     | dBc/Hz | @ 1KHz   |
| 1.5. |                                 | -165                           | -165     | -165     | dBc/Hz | @ 10KHz  |
| 1.6. |                                 | -170                           | -170     | -170     | dBc/Hz | @ 100KHz   |
| 1.7. |                                 | -172                           | -172     | -172     | dBc/Hz | @ 1MHz   |

## 2. ELECTRICAL FREQUENCY ADJUSTMENT (PIN = "VCO INPUT")

|      | Parameter            | Min.     | Typ. | Max. | Unit | Test Condition |
|------|----------------------|----------|------|------|------|----------------|
| 2.1. | Pulling Range        | +/-35    |      |      | ppm  |                |
| 2.2. | Control Voltage      | 0        |      | +5.0 | V    |                |
| 2.3. | Slope                | Positive |      |      |      |                |
| 2.4. | Center Voltage       |          | +2.5 |      | V    |                |
| 2.5. | Linearity            | -10      |      | +10  | %    |                |
| 2.6. | Modulation Bandwidth | 5        |      |      | KHz  |                |
| 2.7. | VC Input Impedance   | 1        |      |      | Mohm |                |

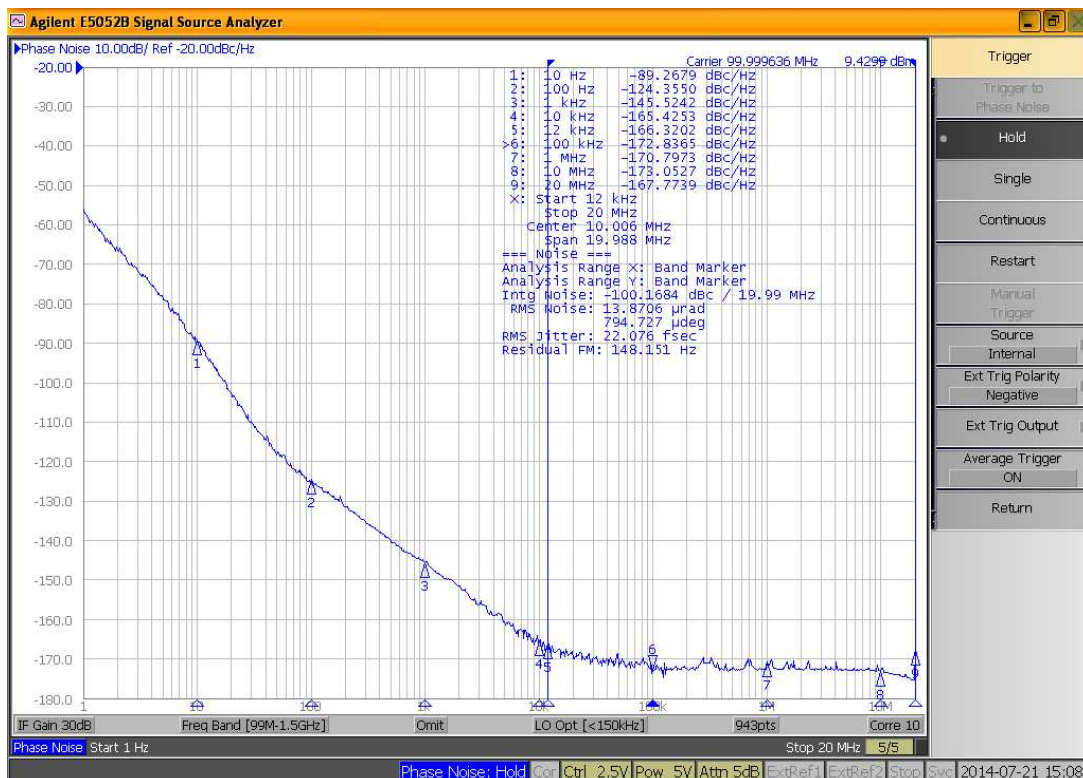
## 3. INPUT POWER (PIN = "+VDC")

|      | Parameter | Min.  | Typ. | Max.  | Unit | Test Condition            |
|------|-----------|-------|------|-------|------|---------------------------|
| 3.1. | Voltage   | +4.75 | +5   | +5.25 | V    |                           |
| 3.2. | Current   |       |      | 30    | mA   | At maximum supply voltage |

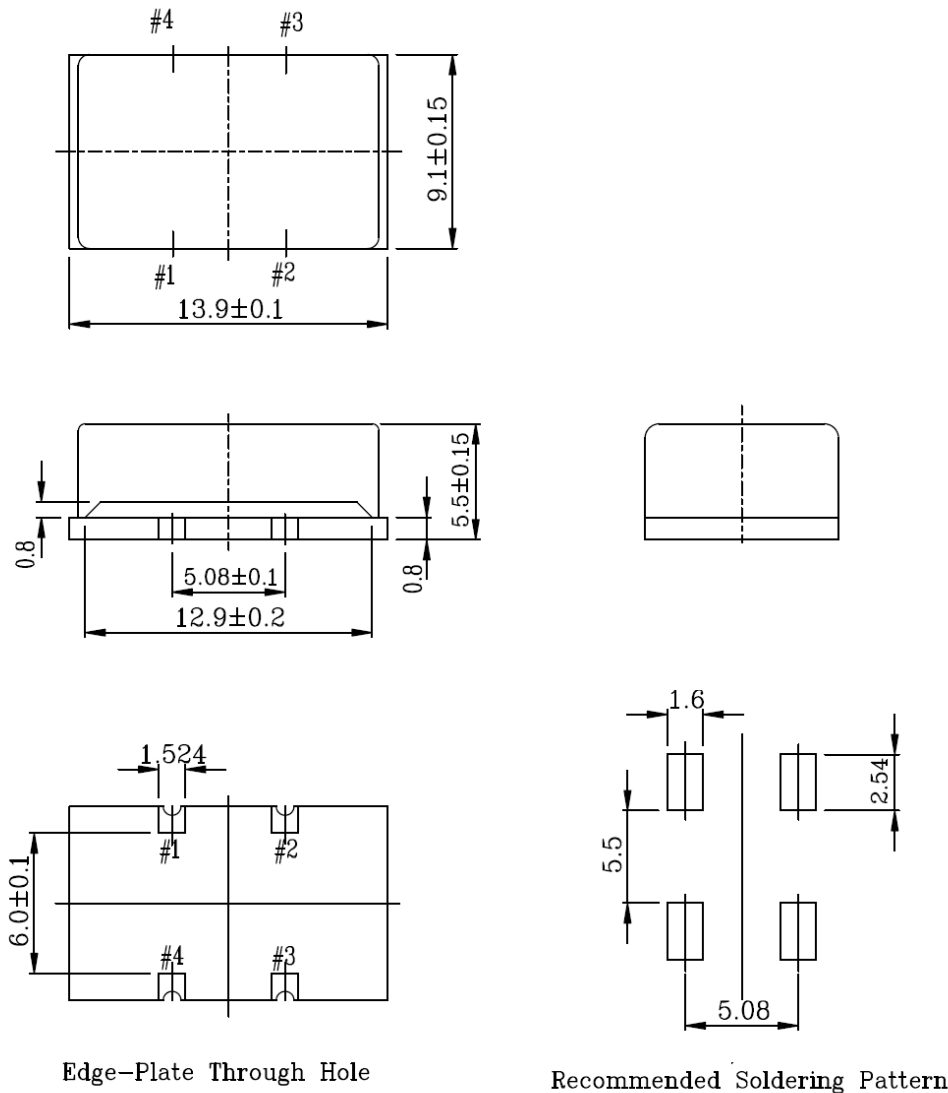
## 4. ENVIRONMENTAL

|      | Parameter        | Reference Std.    | Test Condition  |
|------|------------------|-------------------|---|
| 4.1. | Vibration Test   | DIN EN 60068-2-6  | 10~55Hz, 0.75mm Peak; 55~2000Hz, 10g Peak.<br>10 Cycles; 3 axis; 1Oct./min.       |
| 4.2. | Thermal Shock    | DIN EN 60068-2-14 | 30 min. @each temperature 10 cycles,<br>Transfer<1min.; -40°C +/-3°C; 85°C +/-3°C |
| 4.3. | Mechanical Shock | DIN EN 60068-2-27 | 6 shocks per axis, 100g; 6ms both directions                                      |

## PHASE NOISE TEST DATA



## OUTLINE DRAWING



Edge-Plate Through Hole

Recommended Soldering Pattern

## Pin FUNCTIONS

| Pin | Function |
|-----|----------|
| #1  | Vcon     |
| #2  | GND      |
| #3  | Output   |
| #4  | VDD      |

## PRODUCT IDENTIFICATION (MARKING)

