

Travelling Merchant: \_\_\_\_\_

# DATASHEET

Standard:           **O22B-K428-10.00MHZ**          

P/N: \_\_\_\_\_

| Plot             |         |          | The Label              |
|------------------|---------|----------|------------------------|
| Drew             | Audited | Approved | Stamp, please! Thanks! |
|                  |         |          |                        |
| Date: 2018.04.04 |         |          |                        |

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## 1. Electrical Parameters

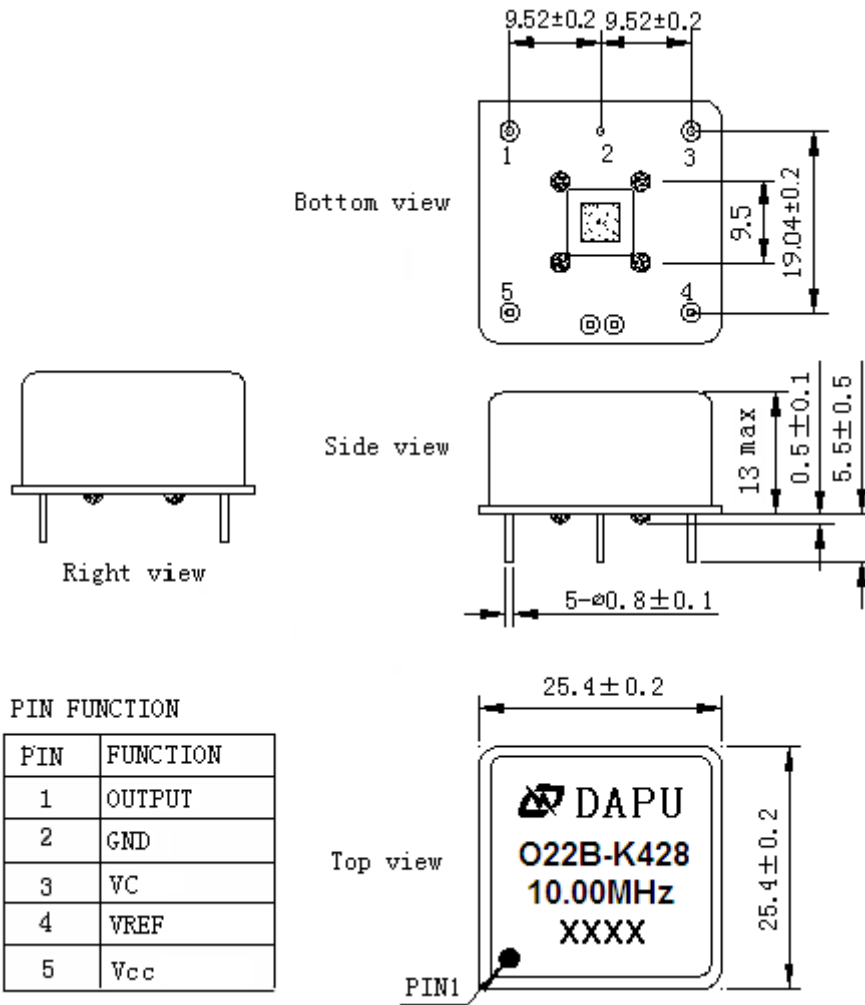
| MODEL: O22B-K428-10.00MHZ |   |            |      |       |                  |  |
|---------------------------|---|------------|------|-------|------------------|--|
| Item                      | Description   | Parameters |      |       | Unit             | Test Condition   |
|                           |   | Min.       | Typ. | Max.  |                  |  |
| Output                    | Frequency   | 10.00      |      |       | MHz              |  |
|                           | Output Waveform                                     | Sine wave  |      |       |                  |  |
|                           | Level   | 6          |      | 10    | dBm              |  |
|                           | Load  | 50         |      |       | $\Omega$         |  |
|                           | Harmonics Suppression                               |            |      | -40   | dBc              |  |
|                           | Spurious Suppression                                |            |      | -70   | dBc              |  |
| Frequency Stabilities     | Frequency Tolerance vs. Operating Temperature Range | -5         |      | +5    | $\times 10^{-9}$ | $T_A$ varied from $-40^{\circ}\text{C}$ to $85^{\circ}\text{C}$ , measurement referenced to frequency observed with $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$ , $V_{\text{cc}}=5.0\text{V}$ , $V_c=2.0\text{V}$ , $O_{\text{load}}=50\Omega$ , temperature variable speed less than $2^{\circ}\text{C}$ per minute. |
|                           | Initial Frequency Tolerance                         | -0.05      |      | +0.05 | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_c=2.0\text{V}$ and after 15 minutes of operation, within 30 days after ex-works.   |
|                           | Frequency Tolerance vs. supply voltage              | -2         |      | +2    | $\times 10^{-9}$ | measurement referenced to frequency observed $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}$ varied from 4.75V to 5.25V, $V_c=2.0\text{V}$ , $O_{\text{load}}=50\Omega$ .   |
|                           | Frequency Tolerance vs. Load                        | -2         |      | +2    | $\times 10^{-9}$ | 5% Load Change Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_c=2.0\text{V}$ , $O_{\text{load}}=50\Omega$ .   |
|                           | Short Term Stability                                |            |      | 0.01  | $\times 10^{-9}$ | Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}\text{C}$ ; 1s, using PN9000 equipment.   |
|                           | Aging Tolerance per day                             | -1         |      | +1    | $\times 10^{-9}$ | $V_{\text{cc}}, V_c, T_A$ constant Measurement referenced to frequency observed with   |
|                           | Aging Tolerance 1Year                               | -0.1       |      | +0.1  | $\times 10^{-6}$ | $T_A=25^{\circ}\text{C}, V_{\text{cc}}=5.0\text{V}, V_c=2.0\text{V}, O_{\text{load}}=50\Omega$ and after 30 days of operation.   |
| Power Supply              | Supply Voltage                                      | 4.75       | 5.0  | 5.25  | V                |  |
|                           | Current Consumption                                 |            |      | 300   | mA               | @ $25^{\circ}\text{C}$   |
|                           | Current Consumption during warm up                  |            |      | 600   | mA               |  |
|                           | Warm-Up Time  |            |      | 5     | minutes          | @ $25^{\circ}\text{C}$ within $\pm 0.1 \times 10^{-6}$ of final frequency with reference after 30 minutes on.  |



|                                 |  |   |      |       |                  |  |
|---------------------------------|--|---|------|-------|------------------|--|
| Voltage Control Characteristics | Frequency Tuning Range   | -1.5  |      | -0.5  | $\times 10^{-6}$ | $V_c=0V$ . measurement referenced to $V_c=2.0V$ .        |
|                                 |  | -0.05   |      | +0.05 | $\times 10^{-6}$ | $V_c=2.0V$ . measurement referenced to exactly 10.00MHz. |
|                                 |  | +0.5  |      | +1.5  | $\times 10^{-6}$ | $V_c=4.0V$ . measurement referenced to $V_c=2.0V$ .      |
|                                 | Linearity  |   |      | 10    | %                |  |
|                                 | Slope  | Positive  |      |       |                  |  |
|                                 | Input Impedance  | 100   |      |       |                  | K $\Omega$   |
| Phase Noise                     | Phase Noise @25°C  |   | -120 | -110  | dBc/Hz           | 10Hz   |
|                                 |  |   | -140 | -130  |                  | 100Hz  |
|                                 |  |   | -155 | -150  |                  | 1KHz   |
|                                 |  |   | -158 | -153  |                  | 10KHz  |
|                                 |  |   | -158 | -153  |                  | 100KHz   |
| Environmental Conditions        | Operable Temperature   | -40   |      | +85   | °C               |  |
|                                 | Storage Temperature  | -55   |      | +105  | °C               |  |
|                                 | ESD Level  | Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.  |      |       |                  |  |
|                                 |  | Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.  |      |       |                  |  |
|                                 | Moisture Sensitivity Level   | Not humidity sensitive.   |      |       |                  |  |
|                                 | Vibration  | Frequency range: 20Hz~2000Hz, acceleration :6g, ASD: 0.04g <sup>2</sup> /Hz one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z), GJB 150.16A-2009 |      |       |                  |  |
| Shock                           | 50g; 11ms; half sine wave (3 times for each 3 directions X ,Y, Z ),IEC 68-2-27 Test Ea/Severity 50A. |   |      |       |                  |  |



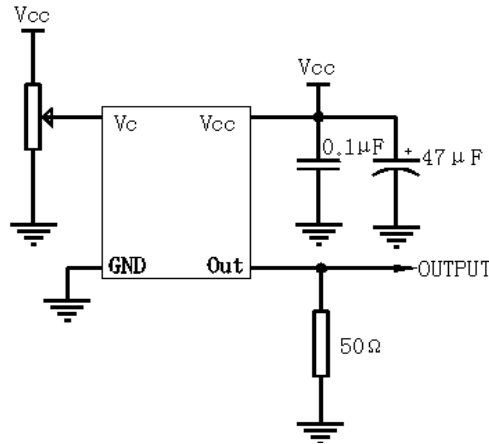
## 2. Mechanical Structure (mm)



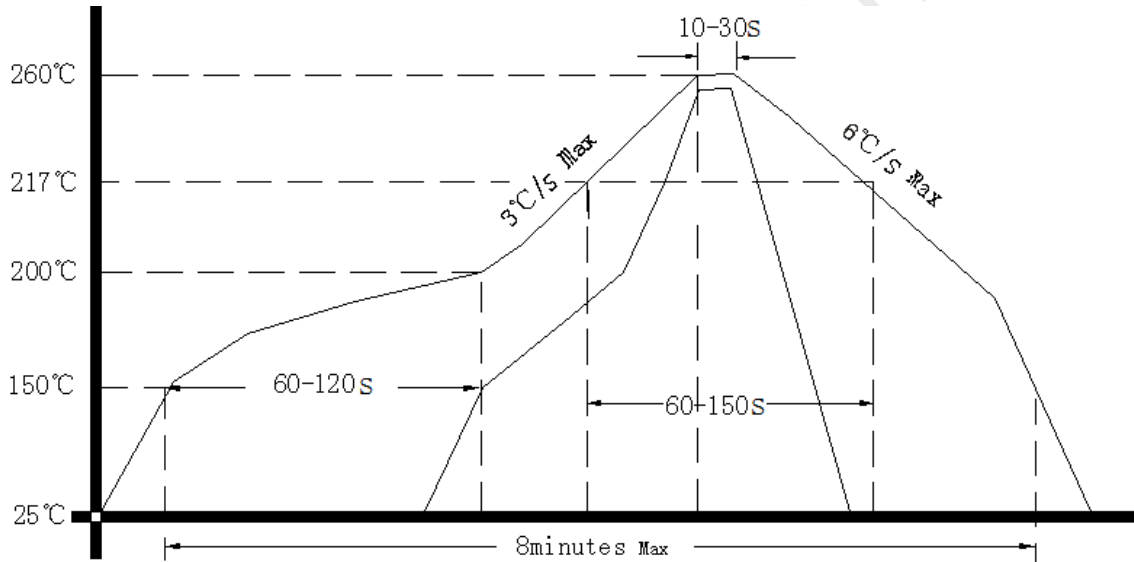
- Note1:** Tolerance  $\pm 0.2\text{mm}$  without mark
- Note2:** The first two xx representative: week  
After two xx representative: year
- Note3:** Referential Weight 13.6g
- Note4:** NC is not connect



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



### 5. Package(mm)

