

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

# DATASHEET

Standard:           **O22A-K428-102.40MHz**          

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

| Plot             |         |          | The Label              |
|------------------|---------|----------|------------------------|
| Drew             | Audited | Approved | Stamp, please! Thanks! |
|                  |         |          |                        |
| Date: 2021.01.18 |         |          |                        |

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**Table of amendment**

| Version | Revision contents  | Prepared by  | Revised date |
|---------|--|--------------|--------------|
| 1.0     | The first issued   | <i>Amway</i> | 2019.11.19   |
| 1.1     | The “ ESD Level” “ Mechanical Structure” changed   | <i>Amway</i> | 2020.06.03   |
| 1.2     | The “ Frequency Tolerance vs. Operating Temperature Range”<br>“ Operable Temperature”changed | <i>Amway</i> | 2021.01.18   |
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## 1. Electrical Parameters

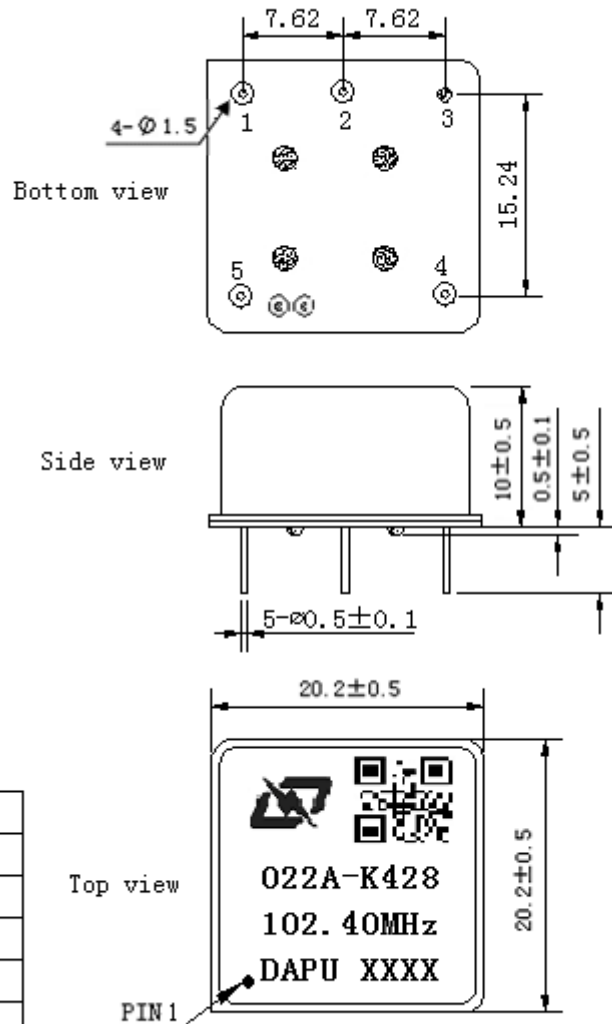
| MODEL: O22A-K428-102.40MHZ |   |            |      |       |                  |   |
|----------------------------|---|------------|------|-------|------------------|---|
| Item                       | Description   | Parameters |      |       | Unit             | Test Condition  |
|                            |   | Min.       | Typ. | Max.  |                  |   |
| Output                     | Frequency   | 102.40     |      |       | MHz              |   |
|                            | Output Waveform                                     | Sine wave  |      |       |                  |   |
|                            | Level   | 5          | 8    |       | dBm              |   |
|                            | Load  | 50         |      |       | $\Omega$         |   |
|                            | Harmonics Suppression                               |            |      | -35   | dBc              |   |
|                            | Spurious Suppression                                |            |      | -75   | dBc              |   |
| Frequency Stabilities      | Frequency Tolerance vs. Operating Temperature Range | -0.05      |      | +0.05 | $\times 10^{-6}$ | $T_A$ varied from $-45^{\circ}\text{C}$ to $70^{\circ}\text{C}$ , measurement referenced to frequency observed with $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$ , $V_{\text{cc}}=5.0\text{V}$ , $V_{\text{c}}=2.0\text{V}$ , $O_{\text{load}}=50\Omega$ , temperature rise speed less than $2^{\circ}\text{C}$ per minute. |
|                            | Initial Frequency Tolerance                         | -0.1       |      | +0.1  | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_{\text{c}}=2.0\text{V}$ and after 15 minutes of operation, within 30 days after ex-works.   |
|                            | Frequency Tolerance vs. supply voltage              | -0.05      |      | +0.05 | $\times 10^{-6}$ | measurement referenced to frequency observed $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}$ varied from 4.75V to 5.25V, $V_{\text{c}}=2.0\text{V}$ , $O_{\text{load}}=50\Omega$ .   |
|                            | Frequency Tolerance vs. Load                        | -0.05      |      | +0.05 | $\times 10^{-6}$ | 5% Load Change Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_{\text{c}}=2.0\text{V}$ , $O_{\text{load}}=50\Omega$ .   |
|                            | 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.  |
|                            | Aging Tolerance per day                             | -2         |      | +2    | $\times 10^{-9}$ | $V_{\text{cc}}, V_{\text{c}}, T_A$ constant Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_{\text{c}}=2.0\text{V}$ , $O_{\text{load}}=50\Omega$ and after 30 days of operation.  |
|                            | Aging Tolerance 1Year                               | -0.1       |      | +0.1  | $\times 10^{-6}$ |   |
|                            | Aging Tolerance 5ear                                | -0.4       |      | +0.4  | $\times 10^{-6}$ |   |
|                            | Aging Tolerance 10ear                               | -0.8       |      | +0.8  | $\times 10^{-6}$ |   |
| Power Supply               | Supply Voltage                                      | 4.75       | 5.0  | 5.25  | V                |   |
|                            | Current Consumption                                 |            |      | 250   | mA               | @ $25^{\circ}\text{C}$  |
|                            | Current Consumption during warm up                  |            |      | 550   | mA               |   |



|                                 |   |   |  |      |                  |   |
|---------------------------------|---|---|--|------|------------------|---|
| Voltage Control Characteristics | Frequency Tuning Range  |   |  | -1.2 | $\times 10^{-6}$ | $V_c=0V$ . measurement referenced to $V_c=2.0V$ .         |
|                                 |   | -0.1  |  | +0.1 | $\times 10^{-6}$ | $V_c=2.0V$ . measurement referenced to exactly 102.40MHz. |
|                                 |   | +1.2  |  |      | $\times 10^{-6}$ | $V_c=4.0V$ . measurement referenced to $V_c=2.0V$ .       |
|                                 | Linearity   |   |  | 10   | %                |   |
|                                 | Slope   | Positive  |  |      |                  |   |
|                                 | Input Impedance   | 100   |  |      |                  | K $\Omega$  |
| Phase Noise                     | Phase Noise   |   |  | -150 | dBc/Hz           | 1KHz  |
|                                 |   |   |  | -155 |                  | 10KHz   |
|                                 |   |   |  | -160 |                  | 100KHz  |
| Environmental Conditions        | Operable Temperature  | -45   |  | +70  | $^{\circ}C$      |   |
|                                 | Storage Temperature   | -55   |  | +105 | $^{\circ}C$      |   |
|                                 | ESD Level   | Human Body Model,class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.   |  |      |                  |   |
|                                 |   | Machine Model, class B: 200V to 400V; JEDEC JESD22-A115C.   |  |      |                  |   |
|                                 | Moisture Sensitivity Level  | Not humidity sensitive.   |  |      |                  |   |
|                                 | Vibration   | Test Condition: 0.75mm ;acceleration:10g;10Hz~500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X , Y , Z), IEC 68-2-06 Test Fc. |  |      |                  |   |
| Shock                           | 50g; 11ms; half sine wave (3 times for each 3 directions X , Y , Z),IEC 68-2-27 Test Ea/Severity 50A. |   |  |      |                  |   |
| Full Package Storage            | Relative humidity (%)   | 20%~70%   |  |      |                  |   |
|                                 | Temperature ( $^{\circ}C$ )   | -10~35 $^{\circ}C$  |  |      |                  |   |



## 2. Mechanical Structure (mm)



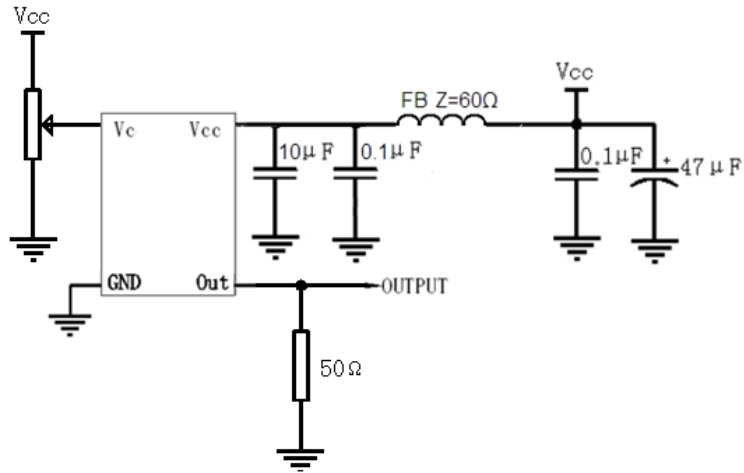
### PIN FUNCTION

| PIN | NOTATION | FUNCTION        |
|-----|----------|-----------------|
| 1   | VCC      | Supply Voltage  |
| 2   | OUTPUT   | RF Output       |
| 3   | GND      | GND             |
| 4   | VC       | Control Voltage |
| 5   | Vref     | 4.0V            |

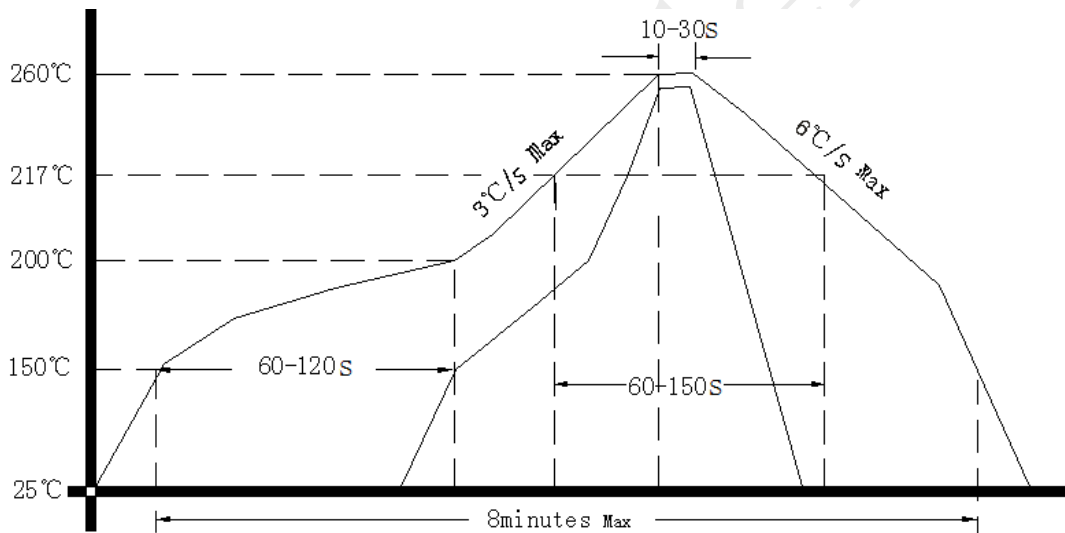
- Note1:** Tolerance ±0.20mm without mark
- Note2:** The first two xx representative: week  
After two xx representative: year
- Note3:** Referential weight 8.0g



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



### 5. Package(mm)

