Customer Code : A008

# DATASHEET

DAPU P/N: **O23L-0801-38.88MHz**

Customer P/N:

| DAPU | | | Customer Approval |
|---|---|---|---|
| Drew | Audited | Approved | |
| Amway.wei | Tony · Wang | James.Liu | |
| Date: 2018.01.09 | | | Stamp, please! Thanks! |


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# Table of amendment

| Version | Revision contents | Prepared by | Revised date |
|---|---|---|---|
| 1.0 | The first issued | Amway | 2017.10.31 |
| 1.1 | The “Marking” changed | Amway | 2018.01.09 |
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## 1. Electrical Parameters

**MODEL： O23L-0801-38.88MHz**

| Item | Description | Parameters | | | Unit | Test Condition |
|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | |
| Output | Frequency | | 38.88 | | MHz | |
| | Output Waveform | | HCMOS | | | |
| | Output High Voltage | 3.6 | | | V | $V_{cc}$=5.0V, $O_{load}$=20pF |
| | Output Low Voltage | | | 0.5 | V | $V_{cc}$=5.0V, $O_{load}$=20pF |
| | Duty Cycle | 45 | 50 | 55 | % | @50% |
| | Spurious Suppression | | | -60 | dBc | |
| | Rise / Fall Time (10%~90%) | | | 5 | ns | |
| | Load | | 20 | | pF | |
| Frequency Stabilities | Frequency Tolerance vs. Operating Temperature Range | -0.1 | | +0.1 | $\times 10^{-6}$ | $T_A$ varied from-20℃ to 70℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$, $V_{cc}$=5.0V, $V_c$=0V, $O_{load}$=20pF, temperature variable speed less than 2℃per minute. |
| | Initial Frequency Tolerance | -0.3 | | +0.3 | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A$=25℃, $V_{cc}$=5.0V, $V_c$=0V, and after 15 minutes of operation, within 90 days after ex-works. |
| | Frequency Tolerance vs. Supply Voltage | -0.02 | | +0.02 | $\times 10^{-6}$ | measurement referenced to frequency observed $T_A$=25℃, $V_{cc}$ varied from 4.75V to 5.25V, $V_c$ =0V and $O_{Load}$=20pF. |
| | Frequency Tolerance vs. Load | -0.02 | | +0.02 | $\times 10^{-6}$ | 5% load change measurement referenced to frequency observed with $T_A$=25℃, $V_{cc}$=5.0V, $V_c$=0V, and $O_{Load}$=20pF. |
| | Short-Term Stability: Allan Variance | | | 0.2 | $\times 10^{-9}$ | Temperature stability, no EMI\EMC or other interference， test after power for 1hour ref. to 25℃; 1s, using PN9000 equipment. |
| | Aging Tolerance Per Day | -0.01 | | +0.01 | $\times 10^{-6}$ | $V_{cc}$, $V_c$, $T_A$ constant measurement referenced to frequency observed with $T_A$=25℃, $V_{cc}$=5.0V, $V_c$=0V, and after 30 days of operation. |
| | Day fluctuation | -0.04 | | +0.04 | $\times 10^{-6}$ | |
| | Aging Tolerance 1 Year | -1 | | +1 | $\times 10^{-6}$ | |
| | Aging Tolerance 10 Years | -4 | | +4 | $\times 10^{-6}$ | |

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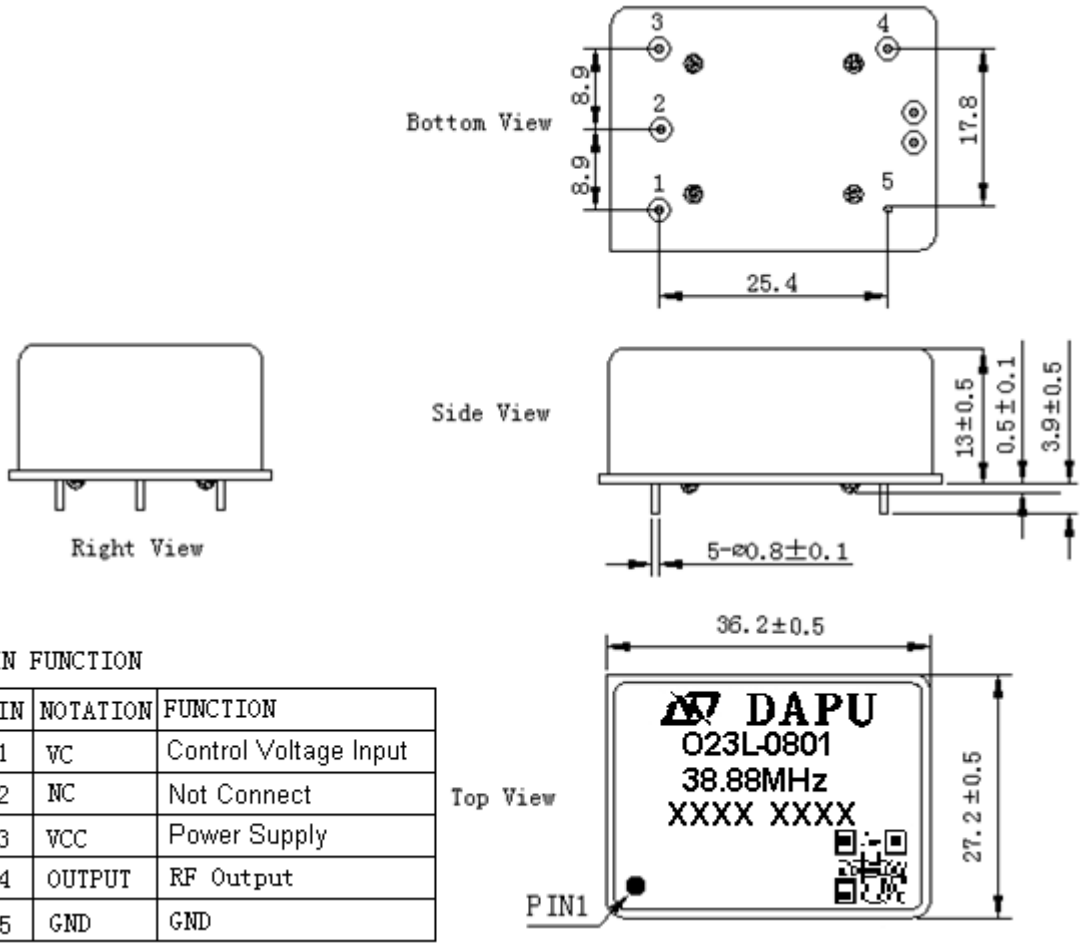
| | | | | | | |
|---|---|---|---|---|---|---|
| Power Supply | Supply Voltage | 4.75 | 5.0 | 5.25 | V | |
| | Steady Consumption | | | 300 | mA | @25℃ |
| | Warm up current | | | 700 | mA | |
| Voltage Control Characteristics | Frequency Tuning Range | +6 | | +9 | $\times 10^{-6}$ | $V_c$=-5.0V. measurement referenced to $V_c$=0V |
| | | -0.3 | | +0.3 | $\times 10^{-6}$ | $V_c$=0V. measurement referenced to exactly 38.88MHz |
| | | -9 | | -6 | $\times 10^{-6}$ | $V_c$=+5.0V. measurement referenced to $V_c$=0V |
| | Linearity | | | 10 | % | |
| | Slope | Negative | | | | |
| | Input Impedance | 50 | | | KΩ | |
| Phase Noise | Phase Noise | | -85 | -80 | dBc/Hz | 10Hz |
| | | | -115 | -110 | | 100Hz |
| | | | -125 | -120 | | 1KHz |
| | | | -135 | -130 | | 10KHz |
| | | | -145 | -140 | | 100KHz |
| Environmental Conditions | Jitter | | | 100 | ps | 12KHz~1MHz |
| | Operable Temperature | -20 | | +70 | ℃ | |
| | Storage Temperature | -50 | | +85 | ℃ | |
| | 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 | 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 (℃) | -10~35℃ | | | | |

## 2. Mechanical Structure (mm)




PIN FUNCTION

| PIN | NOTATION | FUNCTION |
|---|---|---|
| 1 | VC | Control Voltage Input |
| 2 | NC | Not Connect |
| 3 | VCC | Power Supply |
| 4 | OUTPUT | RF Output |
| 5 | GND | GND |

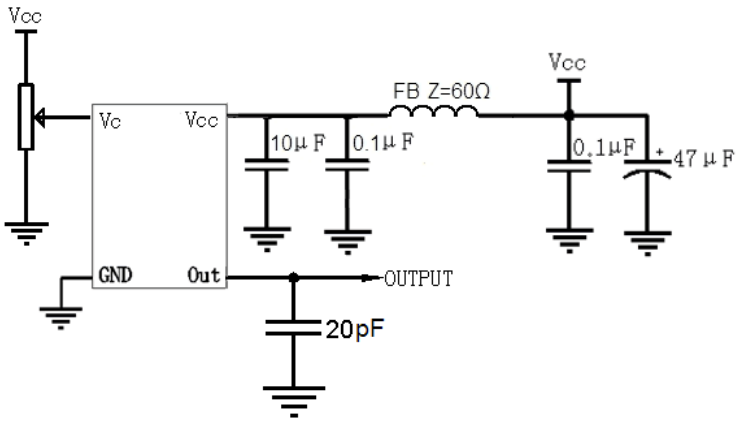
**Note1:** Tolerance ±0.2mm without mark

**Note2:** The first two xx representative: week
After two xx representative: year
At last four xxxx representative: serial number

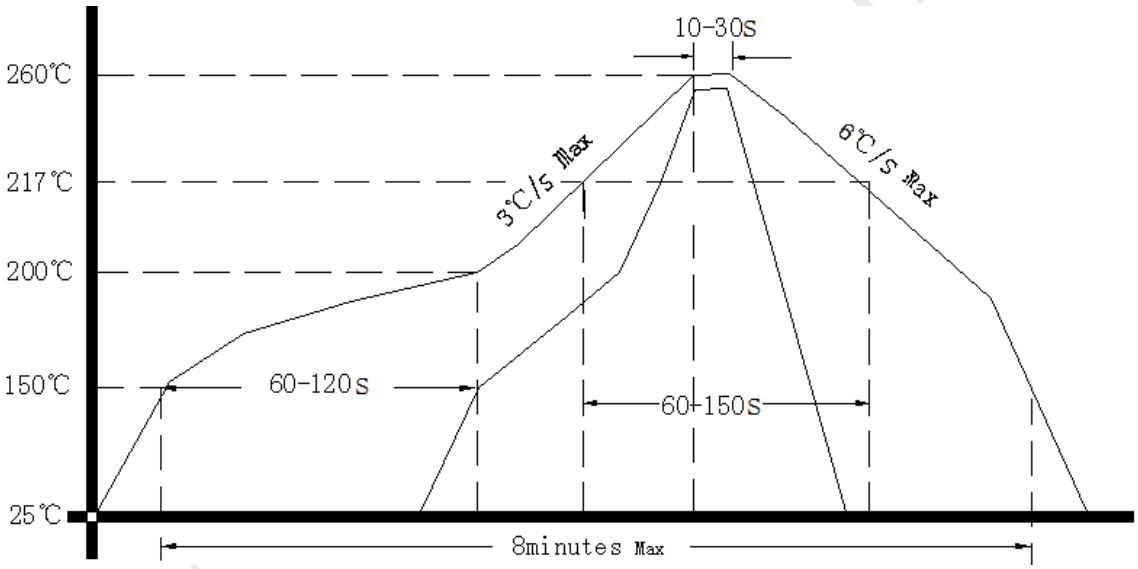
**Note3:** Referential weight 17g

**Note4:** NC is not connect

## 3. Test Circuit




## 4. Reflow Soldering Curve (RoHS)




## 5. Package（mm）