

Customer Code : _____

DATASHEET

DAPU P/N: **O22A-R319-30.72MHz-Luo**

Customer P/N: _____

| DAPU | | | Customer Approval |
|------------------|--------------------|------------------|------------------------|
| Drew | Audited | Approved | Stamp, please! Thanks! |
| <i>Amway.wei</i> | <i>Tony · Wang</i> | <i>James.Liu</i> | |
| Date: 2017.07.25 | | | |

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1. Electrical Parameters

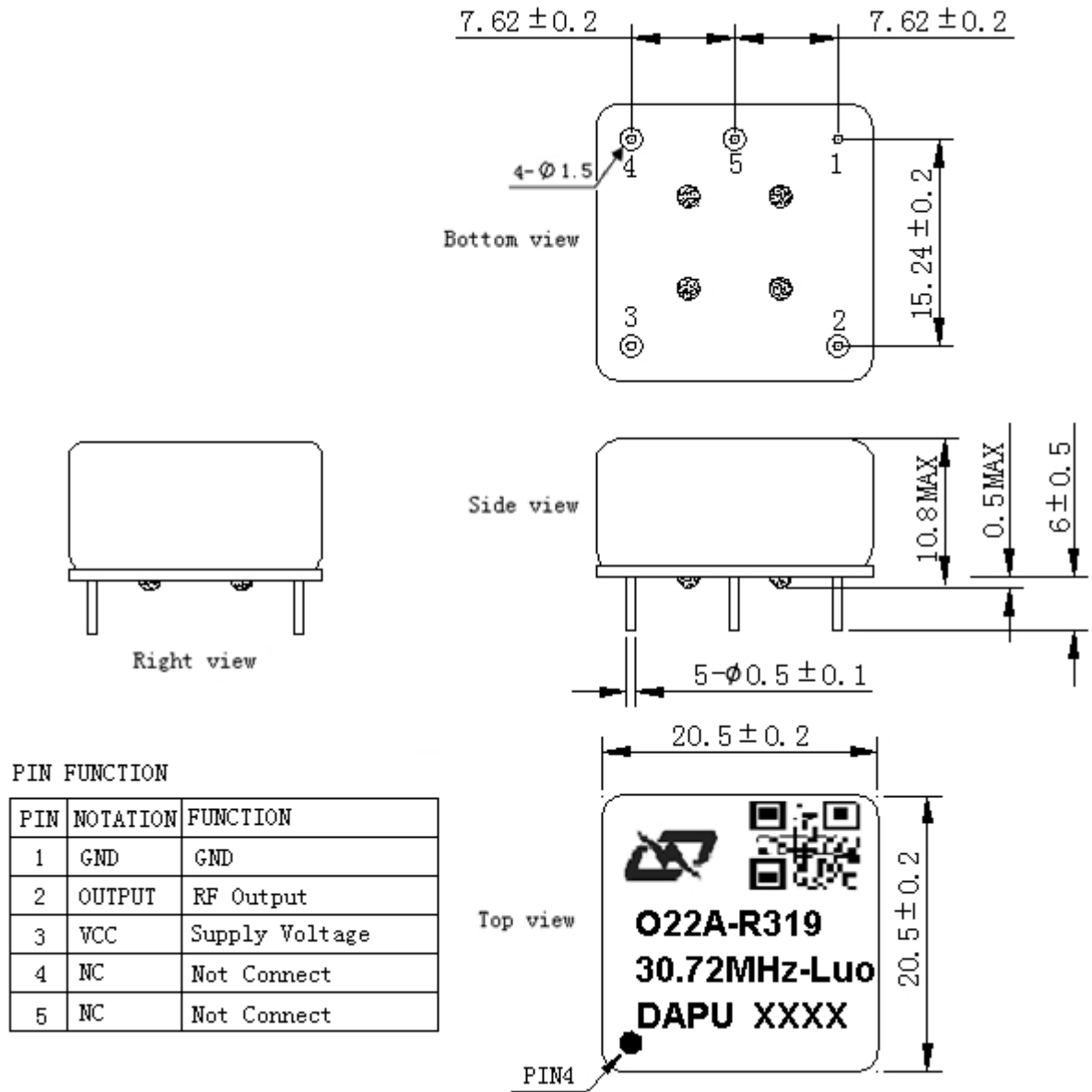
| MODEL: O22A-R319-30.72MHz-Luo | | | | | | |
|-------------------------------|---|------------|------|-------|------------------|---|
| Item | Description | Parameters | | | Unit | Test Condition |
| | | Min. | Typ. | Max. | | |
| Output | Frequency | 30.72 | | | MHz | |
| | Output Waveform | HCMOS | | | | |
| | Output Low Voltage | | | 0.4 | V | $V_{cc}=3.3V, O_{load}=15pF$ |
| | Output High Voltage | 2.4 | | | V | $V_{cc}=3.3V, O_{load}=15pF$ |
| | Duty Cycle | 45 | 50 | 55 | % | @50% |
| | Rise / Fall Time (10%~90%) | | | 5 | ns | |
| | Load | 15 | | | pF | |
| | Start up time | | | 200 | ms | |
| Frequency Stabilities | Frequency Tolerance vs. Operating Temperature Range | -5.0 | | +5.0 | $\times 10^{-9}$ | T_A varied from $-20^{\circ}C$ to $70^{\circ}C$, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, O_{load}=15pF$, temperature variable speed less than $2^{\circ}C$ per minute. |
| | Initial Frequency Tolerance | -0.2 | | +0.2 | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V$, 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 $T_A=25^{\circ}C, V_{cc}$ varied from 3.13V to 3.47V, $O_{load}=15pF$. |
| | Frequency Tolerance vs. Load | -2 | | +2 | $\times 10^{-9}$ | 5% load change measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V$, and $O_{Load}=15pF$. |
| | Short-Term Stability: Allan Variance | | | 0.01 | $\times 10^{-9}$ | Temperature stability, no EMI/EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 1s, using PN9000 equipment. |
| | 24 Hour Holdover Stability | -0.01 | | +0.01 | $\times 10^{-6}$ | Inclusive of temperature, supply variation and 24 hours aging |
| | Total Free-Running Accuracy | -2.1 | | +2.1 | $\times 10^{-6}$ | All condition for 20 years |
| | Aging Tolerance Per Day | -1 | | +1 | $\times 10^{-9}$ | V_{cc}, T_A constant measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V$, and after 30 days of operation. |
| | Aging Tolerance 20 Year | -1.5 | | +1.5 | $\times 10^{-6}$ | |



| | | | | | | |
|--------------------------|---|---|------|------|---------|--|
| Power Supply | Supply Voltage | 3.13 | 3.3 | 3.47 | V | |
| | Steady Consumption | | | 500 | mA | @25℃ |
| | Warm up current | | | 1200 | mA | |
| | Warm-Up Time | | | 5 | minutes | @25 ℃ within $\pm 0.1 \times 10^{-6}$ of final frequency with reference after 1 hour on. |
| Phase Noise | Phase Noise | | -80 | -70 | dBc/Hz | 1Hz |
| | | | -110 | -100 | | 10Hz |
| | | | -135 | -125 | | 100Hz |
| | | | -145 | -140 | | 1KHz |
| | | | -150 | -145 | | 10KHz |
| | | | -150 | -145 | | 100KHz |
| Environmental Conditions | Operable Temperature | -40 | | +85 | ℃ | |
| | Operating Temperature | -20 | | +70 | ℃ | |
| | Storage Temperature | -40 | | +105 | ℃ | |
| | 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)



Note1: Tolerance $\pm 0.20\text{mm}$ without mark

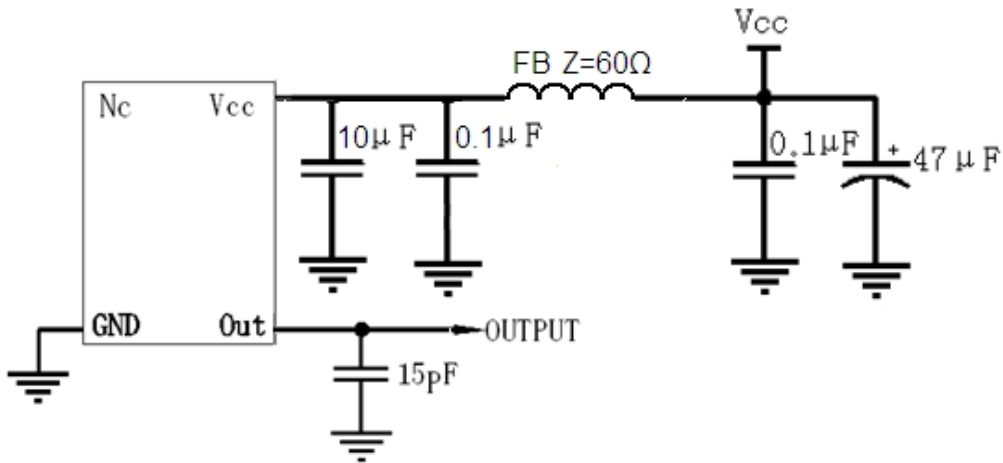
Note2: The first two xx representative: week
After two xx representative: year

Note3: Referential weight 8.0g

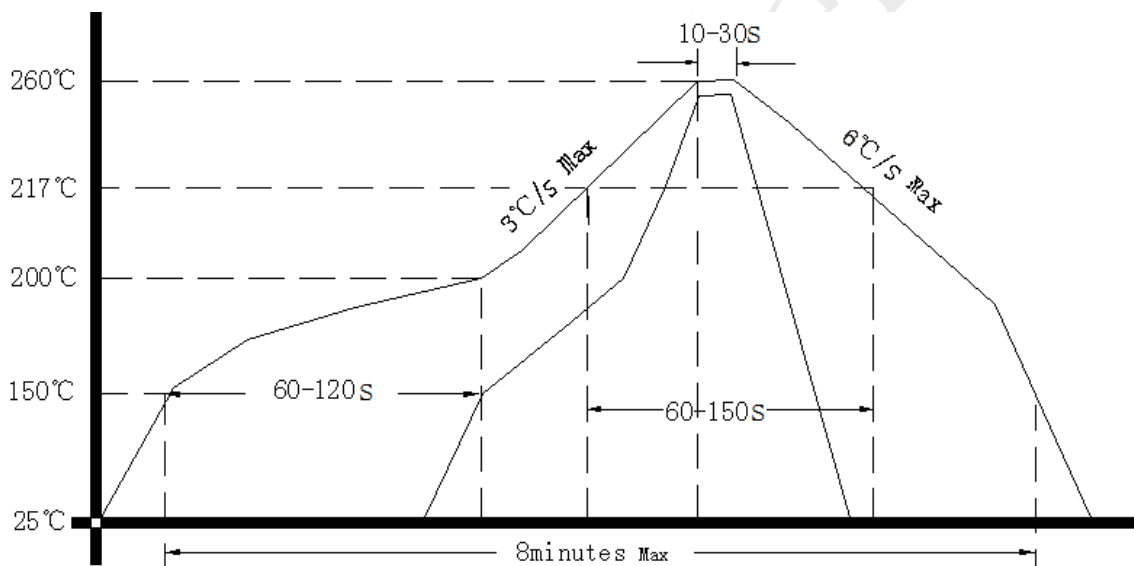
Note4: NC is not connect



3. Test Circuit



4. Reflow Soldering Curve (RoHS)



5. Package (mm)

