

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

# DATASHEET

Standard:           **O79A-K319-48.00MHz**          

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

| Plot             |         |          | The Label              |
|------------------|---------|----------|------------------------|
| Drew             | Audited | Approved | Stamp, please! Thanks! |
|                  |         |          |                        |
| Date: 2020.11.02 |         |          |                        |

## Guangdong Dapu Telecom Technology Co.,Ltd

Bldg13-16,.N.Ind.Zone,SSL Industry Park, Dongguan City, Guangdong Province, China

TEL: 0086-0769-88010888 FAX: 0086-0769-81800098



### Table of amendment

| Version | Revision contents                 | Prepared by  | Revised date |
|---------|-----------------------------------|--------------|--------------|
| 1.0     | The first issued                  | <i>Amway</i> | 2020.08.26   |
| 1.1     | The “Mechanical Structure”changed | <i>Amway</i> | 2020.11.02   |
|         |                                   |              |              |
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## 1. Electrical Parameters

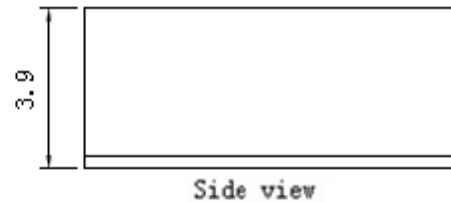
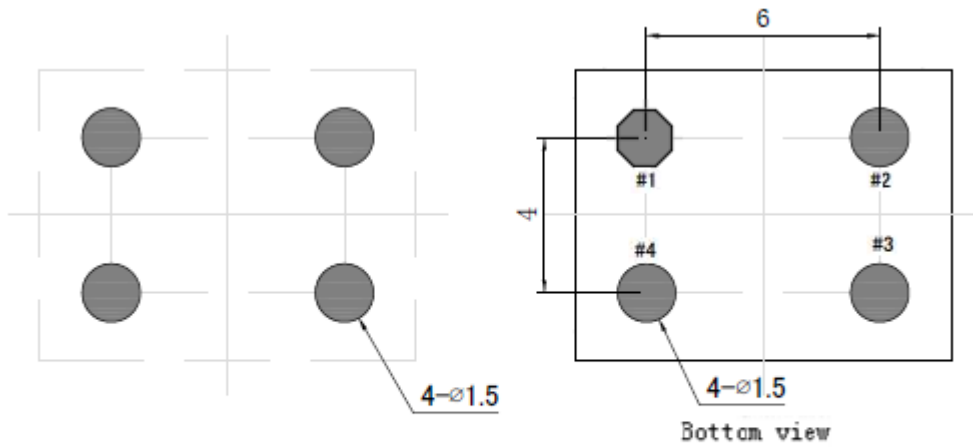
| MODEL: O79A-K319-48.00MHz |   |            |      |       |                                 |  |
|---------------------------|---|------------|------|-------|---------------------------------|--|
| Item                      | Description   | Parameters |      |       | Unit                            | Test Condition   |
|                           |   | Min.       | Typ. | Max.  |                                 |  |
| Output                    | Frequency   | 48.00      |      |       | MHz                             |  |
|                           | Output Waveform                                     | HCMOS      |      |       |                                 |  |
|                           | Output Low Voltage                                  |            |      | 0.4   | V                               | $V_{cc}=3.3V, O_{load}=15\text{ pF}$   |
|                           | Output High Voltage                                 | 2.4        |      |       | V                               | $V_{cc}=3.3V, O_{load}=15\text{ pF}$   |
|                           | Duty Cycle  | 45         |      | 55    | %                               | @50%   |
|                           | Rise / Fall Time                                    |            |      | 6     | ns                              | 10%~90%  |
|                           | Startup time till valid waveform                    |            |      | 50    | ms                              | Time until RF output waveform is within output level, duty cycle and rise/fall time spec   |
|                           | Load  | 15         |      |       | pF                              |  |
| Frequency Stabilities     | Frequency Tolerance vs. Operating Temperature Range | -0.01      |      | +0.01 | $\times 10^{-6}$                | $T_A$ varied from $-40^\circ\text{C}$ to $95^\circ\text{C}$ , measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, O_{load}=15\text{ pF}$ , temperature variable speed less than $2^\circ\text{C}$ per minute. |
|                           | Initial Frequency Tolerance                         | -1         |      | +1    | $\times 10^{-6}$                | Measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V$ within 30 days after ex-works.   |
|                           | Frequency Tolerance vs. Supply Voltage              | -5         |      | +5    | $\times 10^{-9}$                | measurement referenced to frequency observed $T_A= -40\sim 95^\circ\text{C}, V_{cc}$ varied from 3.135V to 3.465V, and $O_{Load}=15\text{ pF}$ .   |
|                           | Frequency Tolerance vs. Load                        | -5         |      | +5    | $\times 10^{-9}$                | 5% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, O_{Load}=15\text{ pF}$ .  |
|                           | Frequency vs. Temperature Slope                     | -0.5       |      | +0.5  | $\times 10^{-9}/^\circ\text{C}$ | $T_{amb}$ slope $\pm 1^\circ\text{C}/\text{min}$ with any temperature window over operating temperature range. Includes also hysteresis effects. Slope measurement for device qualification as described in the related note.                          |
|                           | Aging Tolerance Per Day                             | -3         |      | +3    | $\times 10^{-9}$                | $T_A=25^\circ\text{C}, V_{cc}=3.3V$ , and after 30 days of operation.  |
|                           | Aging Tolerance 1 Year                              | -0.5       |      | +0.5  | $\times 10^{-6}$                |  |



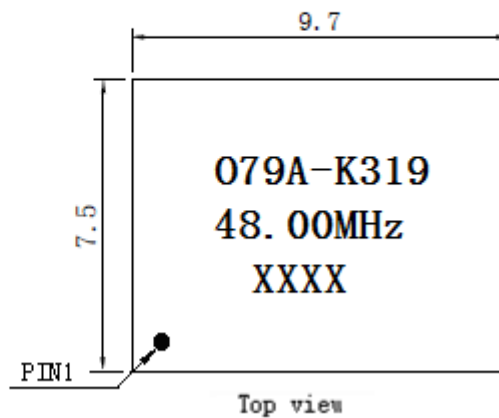
|                             |   |  |      |       |                       |   |  |
|-----------------------------|---|--|------|-------|-----------------------|---|--|
|                             | Warm up Time  |  |      | 60    | s                     | Time until RF output is within $\pm 0.05$ ppm referenced to last frequency reading 1 h after startup, $T_A$ varied from $-40^\circ\text{C}$ to $95^\circ\text{C}$ . |  |
|                             | Steady Consumption  |  |      | 230   | mA                    | @ $25^\circ\text{C}$  |  |
|                             | Warm up current   |  |      | 600   | mA                    |   |  |
|                             | Supply Voltage  | 3.135  | 3.3  | 3.465 | V                     |   |  |
| Phase Noise                 | Phase Noise<br>$-40\sim 95^\circ\text{C}$   |  | -60  | -50   | dBc/Hz                | 1Hz   |  |
|                             |   |  | -99  | -90   |                       | 10Hz  |  |
|                             |   |  | -130 | -120  |                       | 100Hz   |  |
|                             |   |  | -155 | -150  |                       | 1KHz  |  |
|                             |   |  | -165 | -160  |                       | 10KHz   |  |
|                             |   |  | -165 | -160  |                       | 100KHz  |  |
|                             |   |  | -165 | -160  |                       | 1MHz  |  |
| Environmental<br>Conditions | Operating Temperature   | -40  |      | +95   | $^\circ\text{C}$      |   |  |
|                             | Operable Temperature  | -45  |      | +105  | $^\circ\text{C}$      |   |  |
|                             | Storage Temperature   | -55  |      | +105  | $^\circ\text{C}$      |   |  |
|                             | Relative Humidity Range   | 5  |      | 95    | %                     |   |  |
|                             | Absolute Humidity Range   | 1  |      | 29    | $\text{g}/\text{m}^3$ |   |  |
|                             | Air Pressure Range  | 70   |      | 106   | kPa                   |   |  |
|                             | 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  | Level 3.   |      |       |                       |   |  |
|                             | Vibration   | Test Condition: 0.75mm ;acceleration:10g;10Hz~2000Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X , Y , Z) .IEC 68-2-06 Test Fc. |      |       |                       |   |  |
| Shock                       | 100g; 6ms; half sine wave (3 times for each 3 directions X , Y , Z),IEC 68-2-27 Test Ea/Severity 50A. |  |      |       |                       |   |  |



## 2. Mechanical Structure(mm)



| Pin Function |          |
|--------------|----------|
| Pin          | Function |
| 1            | NC       |
| 2            | GND      |
| 3            | OUTPUT   |
| 4            | VCC      |



**Note1:** Tolerance  $\pm 0.2\text{mm}$  without mark

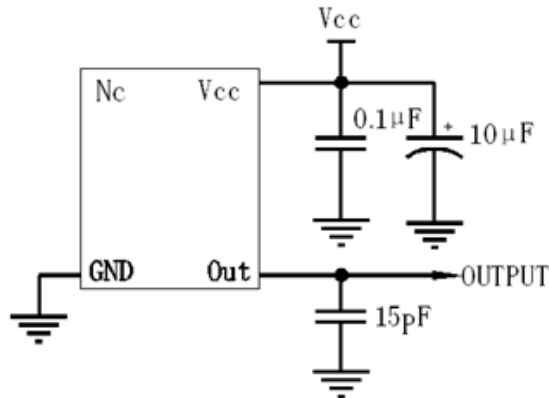
**Note2:** The first two xx representative: week  
After two xx representative: year

**Note3:** Referential Weight 0.3g

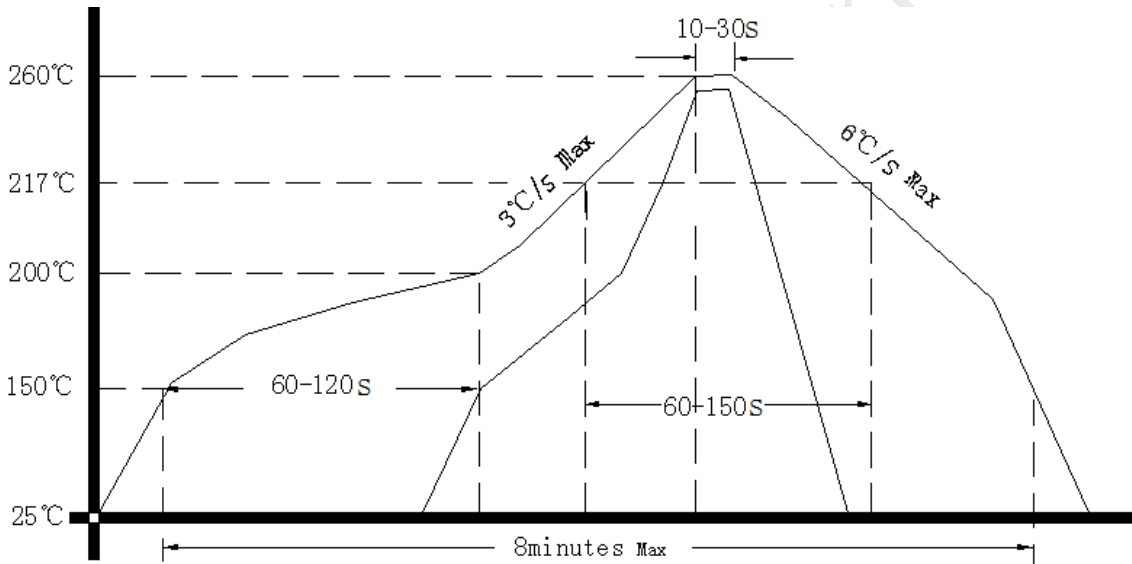
**Note4:** NC is not connect



### 3. Test circuit



### 4. Reflow Soldering Curve (RoHS)



### 5. Package: Tape & Reel (mm)

