

Customer Code : \_\_\_\_\_

# DATASHEET

DAPU P/N: M936-D419-20.00MHz

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

| DAPU             |         |          | Customer Approval      |
|------------------|---------|----------|------------------------|
| Drew             | Audited | Approved | Stamp, please! Thanks! |
|                  |         |          |                        |
| Date: 2016.03.03 |         |          |                        |

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## 1. Electrical Parameters

| MODEL: M936-D419-20.00MHz |                                                     |            |      |       |                  |                                                                                                                                                                                                                                                                    |
|---------------------------|-----------------------------------------------------|------------|------|-------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item                      | Description                                         | Parameters |      |       | Unit             | Test Condition                                                                                                                                                                                                                                                     |
|                           |                                                     | Min.       | Typ. | Max.  |                  |                                                                                                                                                                                                                                                                    |
| Output                    | Frequency                                           | 20.00      |      |       | MHz              |                                                                                                                                                                                                                                                                    |
|                           | Output Waveform                                     | Sine Wave  |      |       |                  |                                                                                                                                                                                                                                                                    |
|                           | Level                                               | 7          |      |       | dBm              |                                                                                                                                                                                                                                                                    |
|                           | Harmonics Suppression                               |            |      | -30   | dBc              |                                                                                                                                                                                                                                                                    |
|                           | Spurious Suppression                                |            |      | -60   | dBc              |                                                                                                                                                                                                                                                                    |
|                           | Load                                                | 50         |      |       | $\Omega$         |                                                                                                                                                                                                                                                                    |
| Frequency Stabilities     | Frequency Tolerance vs. Operating Temperature Range | -0.05      |      | +0.05 | $\times 10^{-6}$ | $T_A$ varied from $-20^{\circ}\text{C}$ to $70^{\circ}\text{C}$ , measurement referenced to frequency observed with $T_A = 25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , $O_{load}=50\Omega$ , temperature variable speed less than $2^{\circ}\text{C}$ per minute. |
|                           | Initial Frequency Tolerance                         | -0.5       |      | +0.5  | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ within 30 days after ex-works.                                                                                                                                   |
|                           | Frequency Tolerance vs. Supply Voltage              | -0.05      |      | +0.05 | $\times 10^{-6}$ | measurement referenced to frequency observed $T_A=25^{\circ}\text{C}$ , $V_{cc}$ varied from 3.13V to 3.47V, and $O_{Load}=50\Omega$ .                                                                                                                             |
|                           | Frequency Tolerance vs. Load                        | -0.05      |      | +0.05 | $\times 10^{-6}$ | 5% load change measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , $O_{Load}=50\Omega$ .                                                                                                                           |
|                           | Aging Tolerance Per Day                             | -0.02      |      | +0.02 | $\times 10^{-6}$ | $T_A=25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , and after 1h of operation.                                                                                                                                                                                       |
|                           | Aging Tolerance 1 Year                              | -1         |      | +1    | $\times 10^{-6}$ |                                                                                                                                                                                                                                                                    |
| Power Supply              | Current Consumption                                 |            |      | 15    | mA               | @ $25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , $O_{load}=50\Omega$ .                                                                                                                                                                                              |
|                           | Supply Voltage                                      | 3.13       | 3.3  | 3.47  | V                |                                                                                                                                                                                                                                                                    |
| Phase Noise               | Phase Noise @ $25^{\circ}\text{C}$                  |            | -85  | -80   | dBc/Hz           | 10Hz                                                                                                                                                                                                                                                               |
|                           |                                                     |            | -115 | -110  |                  | 100Hz                                                                                                                                                                                                                                                              |
|                           |                                                     |            | -135 | -130  |                  | 1KHz                                                                                                                                                                                                                                                               |
|                           |                                                     |            | -145 | -140  |                  | 10KHz                                                                                                                                                                                                                                                              |
|                           |                                                     |            | -145 | -140  |                  | 100KHz                                                                                                                                                                                                                                                             |
|                           |                                                     |            | -148 | -143  |                  | 1MHz                                                                                                                                                                                                                                                               |

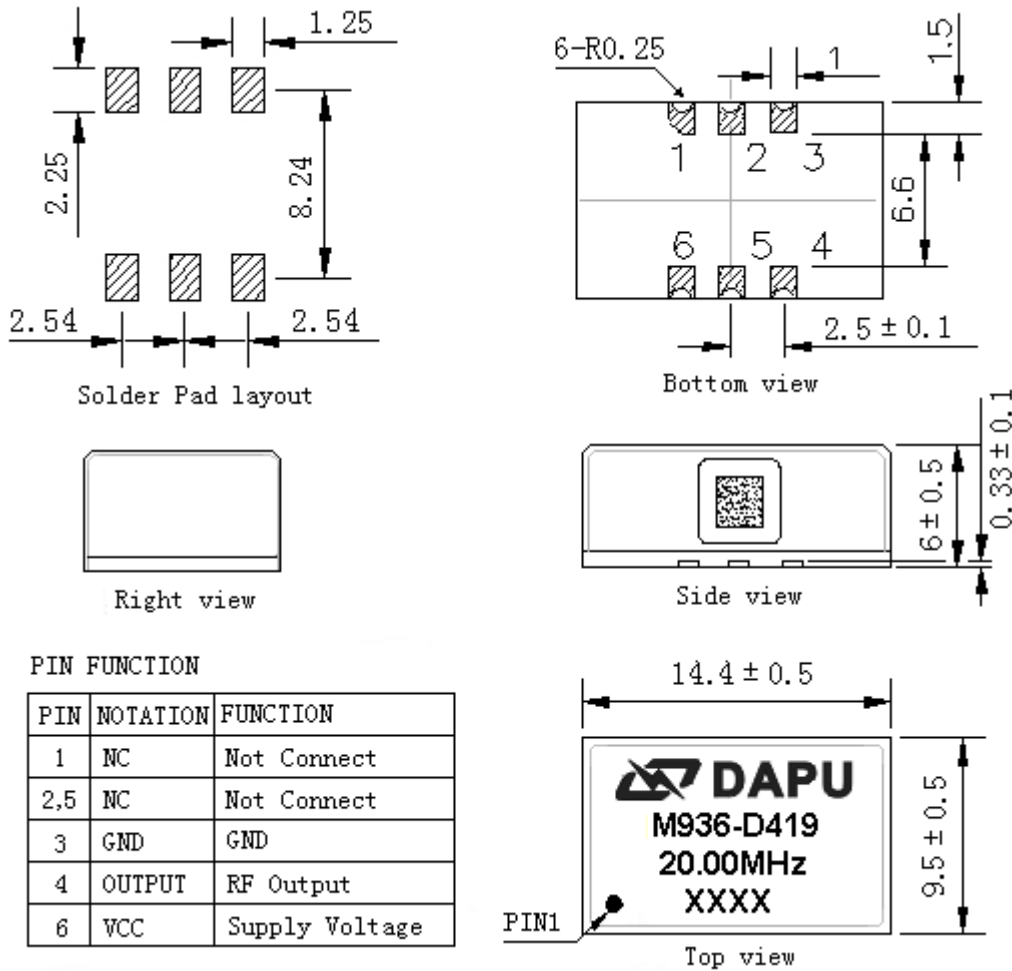


|                          |                                                                                                      |                                                                                                                                                         |  |      |    |  |
|--------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|----|--|
| Environmental Conditions | Operable Temperature                                                                                 | -20                                                                                                                                                     |  | +70  | °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                                                                           | Level 2.                                                                                                                                                |  |      |    |  |
|                          | 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. |                                                                                                                                                         |  |      |    |  |
| Full Package Storage     | Relative humidity (%)                                                                                | 20% ~ 70%                                                                                                                                               |  |      |    |  |
|                          | Temperature (°C)                                                                                     | -10~35°C                                                                                                                                                |  |      |    |  |

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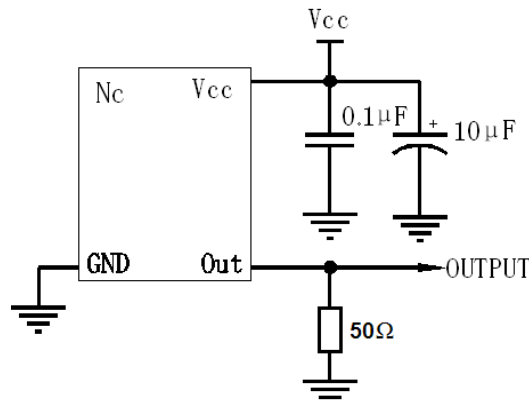


## 2. Mechanical Structure(mm)



- Note1:** Tolerance  $\pm 0.20\text{mm}$  without mark
- Note2:** The first two xx representative: week  
After two xx representative: year
- Note3:** Referential Weight 1.5g
- Note4:** NC is not connect

## 3. Test circuit





#### 4. Reflow Soldering Curve (RoHS)



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

