

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

# DATASHEET

Standard:     **T53-G313-40.00MHz**    

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

| Plot             |         |          | The Label              |
|------------------|---------|----------|------------------------|
| Drew             | Audited | Approved | Stamp, please! Thanks! |
|                  |         |          |                        |
| Date: 2023.09.28 |         |          |                        |

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### Table of amendment

| Version | Revision contents   | Prepared by  | Revised date |
|---------|---|--------------|--------------|
| 1.0     | The first issued  | <i>Amway</i> | 2017.04.10   |
| 1.1     | The “Mechanical Structure” “Reflow Soldering Curve” changed | <i>Amway</i> | 2023.09.28   |
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DAPU

Confidential



## 1. Electrical Parameters

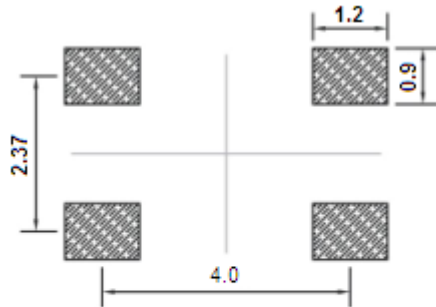
| MODEL: T53-G313-40.00MHz |   |            |      |       |                  |  |
|--------------------------|---|------------|------|-------|------------------|--|
| Item                     | Description   | Parameters |      |       | Unit             | Test Condition   |
|                          |   | Min.       | Typ. | Max.  |                  |  |
| Output                   | Frequency   | 40.00      |      |       | 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         | 50   | 55    | %                | @50%   |
|                          | Rise / Fall Time<br>(10%~90%)                       |            |      | 8     | ns               | @25°C  |
|                          | Load  | 15         |      |       | pF               |  |
| Frequency Stabilities    | Frequency Tolerance vs. Operating Temperature Range | -1.0       |      | +1.0  | $\times 10^{-6}$ | $T_A$ varied from -40°C to 85°C, measurement referenced to frequency observed with $T_A = 25^\circ\text{C}, V_{cc}=3.3V, V_c=1.5V, O_{load}=15\text{ pF}$ , temperature variable speed less than 2°C per minute. |
|                          | Nominal Frequency Tolerance                         | -0.5       |      | +0.5  | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.5V$ , within 30 days after ex-works.   |
|                          | Frequency Tolerance vs. Supply Voltage              | -0.2       |      | +0.2  | $\times 10^{-6}$ | measurement referenced to frequency observed $T_A=25^\circ\text{C}, V_{cc}$ varied from 3.13V to 3.47V, $V_c=1.5V$ , and $O_{Load}=15\text{ pF}$ .   |
|                          | Frequency Tolerance vs. Load                        | -0.2       |      | +0.2  | $\times 10^{-6}$ | 5% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.5V, O_{Load}=15\text{ pF}$  |
|                          | Aging Tolerance Per Day                             | -0.02      |      | +0.02 | $\times 10^{-6}$ | $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.5V$ , and after 1h of operation.   |
|                          | Aging Tolerance 1 Year                              | -1         |      | +1    | $\times 10^{-6}$ |  |
| Power Supply             | Current Consumption                                 |            |      | 10    | mA               | @25°C, $V_{cc}=3.3V, V_c=1.5V, O_{load}=15\text{ pF}$ .  |
|                          | Supply Voltage                                      | 3.13       | 3.3  | 3.47  | V                |  |



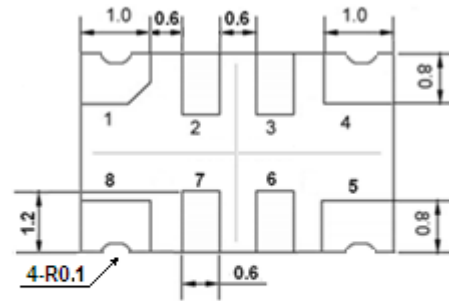
|                                 |   |   |      |      |                  |  |
|---------------------------------|---|---|------|------|------------------|--|
| Voltage Control Characteristics | Frequency Tuning Range  | -15   |      | -10  | $\times 10^{-6}$ | $V_c=0.5V$ . measurement referenced to $V_c=1.5V$ .      |
|                                 |   | -0.5  |      | +0.5 | $\times 10^{-6}$ | $V_c=1.5V$ . measurement referenced to Exactly 40.00MHz. |
|                                 |   | +10   |      | +15  | $\times 10^{-6}$ | $V_c=2.5V$ . measurement referenced to $V_c=1.5V$ .      |
|                                 | Linearity   |   |      | 10   | %                |  |
|                                 | Slope   | Positive  |      |      |                  |  |
|                                 | Input Impedance   | 100   |      |      |                  | K $\Omega$   |
| Phase Noise                     | Phase Noise   |   | -70  | -65  | dBc/Hz           | 10Hz   |
|                                 |   |   | -105 | -100 |                  | 100Hz  |
|                                 |   |   | -130 | -125 |                  | 1KHz   |
|                                 |   |   | -140 | -135 |                  | 10KHz  |
|                                 |   |   | -145 | -140 |                  | 100KHz   |
|                                 |   |   | -145 | -140 |                  | 1MHz   |
| Environmental Conditions        | Operable Temperature  | -40   |      | +85  | $^{\circ}C$      |  |
|                                 | 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  | 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 ( $^{\circ}C$ )   | -10~35 $^{\circ}C$  |      |      |                  |  |



## 2. Mechanical Structure(mm)



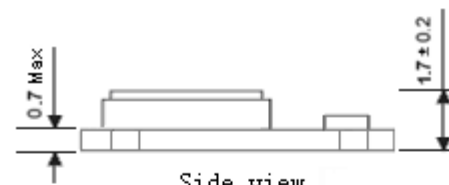
Solder pad layout



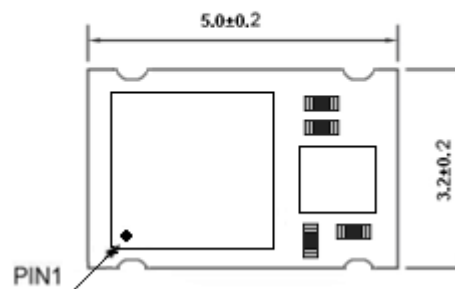
Bottom view

### PIN FUNCTION

| PIN  | NOTATION | FUNCTION        |
|------|----------|-----------------|
| 1    | VC       | Control Voltage |
| 2, 3 | NC       | Not Connect     |
| 4    | GND      | GND             |
| 5    | OUTPUT   | RF Output       |
| 6, 7 | NC       | Not Connect     |
| 8    | VCC      | Supply Voltage  |



Side view



Top view

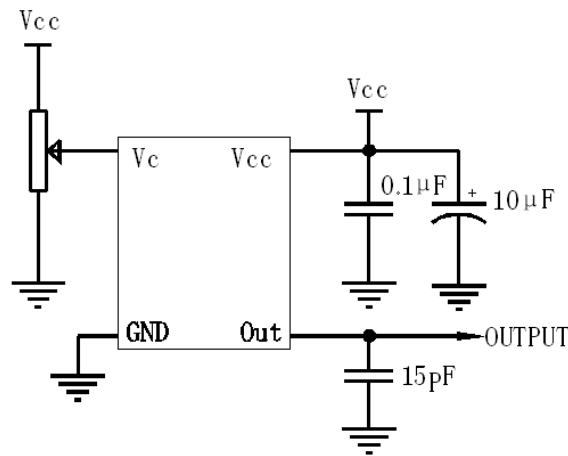
**Note1:** Tolerance  $\pm 0.1\text{mm}$  without mark

**Note2:** Referential weight 0.05g

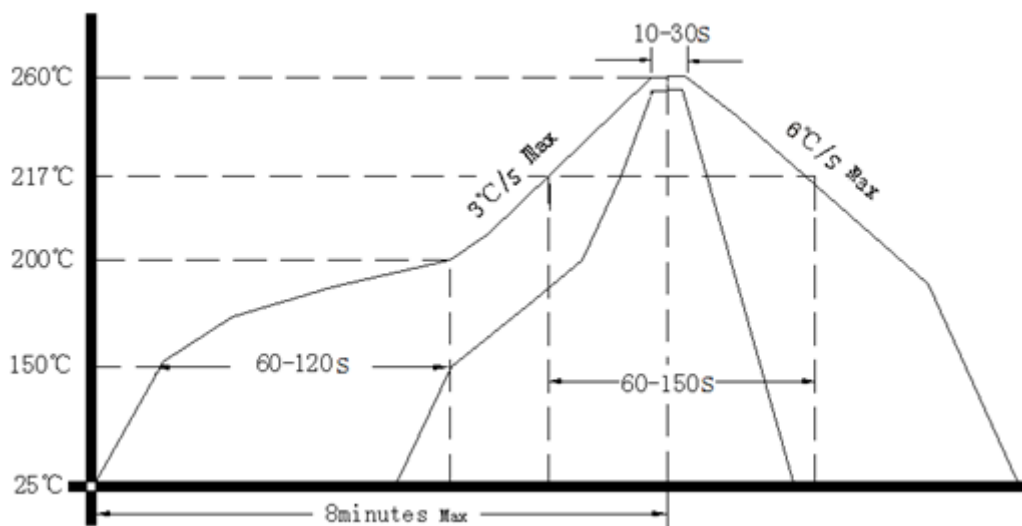
**Note3:** NC is not connect



### 3. Test circuit



### 4. Reflow Soldering Curve (RoHS)



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

