

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

# DATASHEET

Standard: O55A-K325-10.00MHz

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

| Plot             |         |          | The Label              |
|------------------|---------|----------|------------------------|
| Drew             | Audited | Approved | Stamp, please! Thanks! |
|                  |         |          |                        |
| Date: 2018.04.27 |         |          |                        |

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### Table of amendment

| Version | Revision contents             | Prepared by  | Revised date |
|---------|-------------------------------|--------------|--------------|
| 1.0     | The first issued              | <i>Amway</i> | 2017.12.19   |
| 1.1     | The “Warm up current” changed | <i>Amway</i> | 2018.04.27   |
|         |                               |              |              |
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## 1. Electrical Parameters

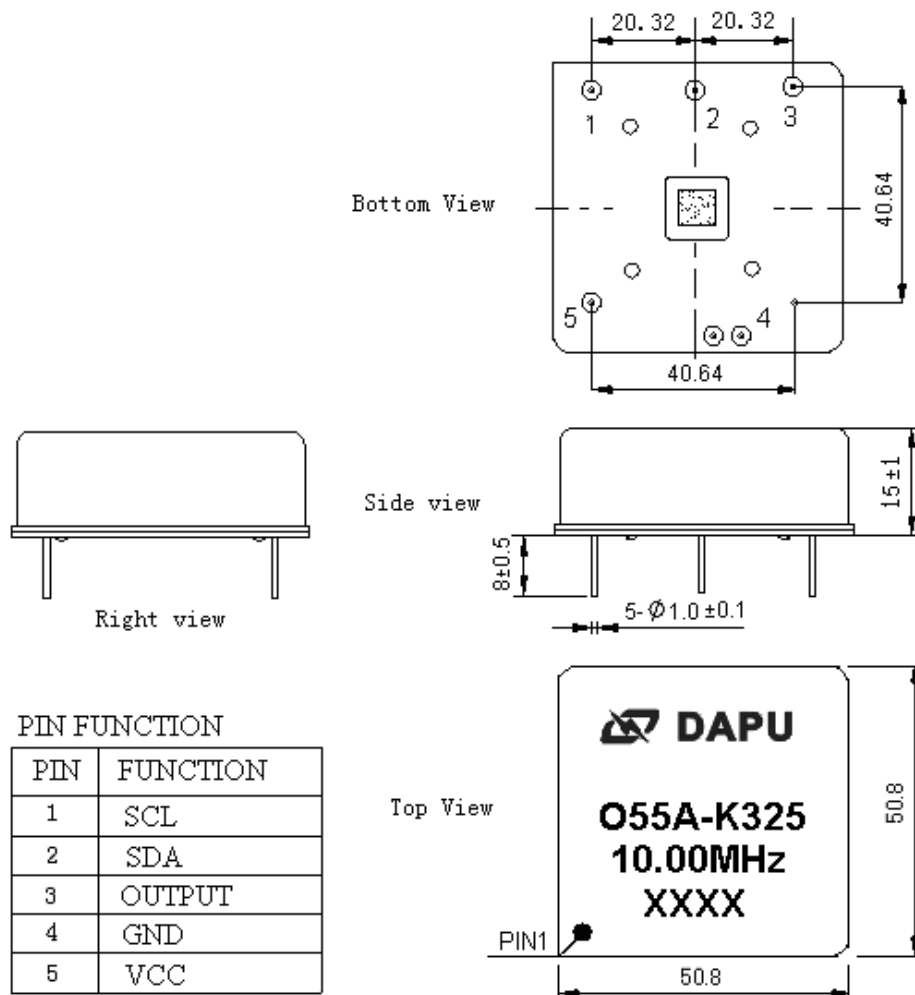
| MODEL: O55A-K325-10.00MHz |                                                              |            |      |       |                    |                                                                                                                                                                                                                                    |
|---------------------------|--------------------------------------------------------------|------------|------|-------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item                      | Description                                                  | Parameters |      |       | Unit               | Test Condition                                                                                                                                                                                                                     |
|                           |                                                              | Min.       | Typ. | Max.  |                    |                                                                                                                                                                                                                                    |
| Output                    | Frequency                                                    | 10.00      |      |       | MHz                |                                                                                                                                                                                                                                    |
|                           | Output Waveform                                              | HCMOS      |      |       |                    |                                                                                                                                                                                                                                    |
|                           | Output Low Voltage                                           |            |      | 0.4   | V                  | $V_{cc}=5.0V, O_{load}=15pF$                                                                                                                                                                                                       |
|                           | Output High Voltage                                          | 2.4        |      |       | V                  | $V_{cc}=5.0V, O_{load}=15pF$                                                                                                                                                                                                       |
|                           | Duty Cycle                                                   | 45         | 50   | 55    | %                  | @50%                                                                                                                                                                                                                               |
|                           | Rise / Fall Time<br>(10%~90%)                                |            |      | 10    | ns                 |                                                                                                                                                                                                                                    |
|                           | Load                                                         | 15         |      |       | pF                 |                                                                                                                                                                                                                                    |
| Frequency<br>Stabilities  | Frequency<br>Tolerance vs.<br>Operating Temperature<br>Range | -0.02      |      | +0.02 | $\times 10^{-9}$   | $T_A$ varied from $-40^{\circ}C$ to $85^{\circ}C$ , measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$ , $V_{cc}=5.0V, O_{load}=15pF$ , temperature variable speed less than $2^{\circ}C$ per minute. |
|                           | Initial Frequency<br>Tolerance                               | -0.05      |      | +0.05 | $\times 10^{-6}$   | Measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V$ , DAC=0x7FFF, and after 15 minutes of operation, within 30 days after ex-works.                                                                   |
|                           | Frequency Tolerance<br>vs. Supply Voltage                    | -0.02      |      | +0.02 | $\times 10^{-9}$   | measurement referenced to frequency observed $T_A=25^{\circ}C$ , $V_{cc}$ varied from 4.75V to 5.25V, $O_{load}=15pF$ .                                                                                                            |
|                           | Frequency Tolerance<br>vs. Load                              | -0.02      |      | +0.02 | $\times 10^{-9}$   | 5% load change measurement referenced to frequency observed with $T_A=25^{\circ}C$ , $V_{cc}=5.0V$ , and $O_{Load}=15pF$ .                                                                                                         |
|                           | Short-Term Stability:<br>Allan Variance                      |            |      | 0.005 | $\times 10^{-9}$   | Temperature stability, no EMI/EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$ ; 1s, using PN9000 equipment.                                                                                            |
|                           | G-sensitivity                                                |            |      | 1.5   | $\times 10^{-9}/G$ | X,Y,Z Total                                                                                                                                                                                                                        |
|                           | Aging Tolerance<br>Per Day                                   | -0.1       |      | +0.1  | $\times 10^{-9}$   | $V_{cc}, T_A$ constant measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V$ , and after 7 days of operation.                                                                                           |
|                           | Aging Tolerance<br>1 Year                                    | -0.01      |      | +0.01 | $\times 10^{-6}$   | $V_{cc}, T_A$ constant measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V$ , and after 30 days of operation.                                                                                          |
| Power<br>Supply           | Supply Voltage                                               | 4.75       | 5.0  | 5.25  | V                  |                                                                                                                                                                                                                                    |
|                           | Steady Consumption                                           |            |      | 900   | mA                 | @ $25^{\circ}C$                                                                                                                                                                                                                    |
|                           | Warm up current                                              |            |      | 3000  | mA                 |                                                                                                                                                                                                                                    |
|                           | Warm-up time                                                 |            |      | 15    | min                | @ $25^{\circ}C$ within $\pm 0.015 \times 10^{-6}$ of final frequency with reference after 1 hour on.                                                                                                                               |



|                             |                            |                                                                                                                                                         |      |       |                  |                                                        |
|-----------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|------------------|--------------------------------------------------------|
| DAC Control Characteristics | Frequency Tuning Range     | -0.5                                                                                                                                                    |      | -0.2  | $\times 10^{-6}$ | DAC=0x0000. measurement referenced to DAC=0x7FFF       |
|                             |                            | -0.05                                                                                                                                                   |      | +0.05 | $\times 10^{-6}$ | DAC=0x7FFF. measurement referenced to Exactly 10.00MHz |
|                             |                            | +0.2                                                                                                                                                    |      | +0.5  | $\times 10^{-6}$ | DAC=0xFFFF. measurement referenced to DAC=0x7FFF       |
|                             | Linearity                  |                                                                                                                                                         |      | 10    | %                |                                                        |
|                             | Slope                      | Positive                                                                                                                                                |      |       |                  |                                                        |
| Phase Noise                 | Phase Noise                |                                                                                                                                                         | -100 | -90   | dBc/Hz           | 1Hz                                                    |
|                             |                            |                                                                                                                                                         | -130 | -120  |                  | 10Hz                                                   |
|                             |                            |                                                                                                                                                         | -145 | -135  |                  | 100Hz                                                  |
|                             |                            |                                                                                                                                                         | -150 | -145  |                  | 1KHz                                                   |
|                             |                            |                                                                                                                                                         | -155 | -150  |                  | 10KHz                                                  |
|                             |                            |                                                                                                                                                         | -155 | -150  |                  | 100KHz                                                 |
|                             |                            |                                                                                                                                                         | -155 | -150  |                  | 1MHz                                                   |
| Environmental Conditions    | Operable Temperature       | -40                                                                                                                                                     |      | +85   | °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~500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X , Y , Z), IEC 68-2-06 Test Fc. |      |       |                  |                                                        |
| Full Package Storage        | Shock                      | 50g; 11ms; half sine wave (3 times for each 3 directions X, Y, Z),IEC 68-2-27 Test Ea/Severity 50A.                                                     |      |       |                  |                                                        |
|                             | Relative humidity (%)      | 20%~70%                                                                                                                                                 |      |       |                  |                                                        |
|                             | Temperature (°C)           | -10~35°C                                                                                                                                                |      |       |                  |                                                        |



## 2. Mechanical Structure(mm)



PIN FUNCTION

| PIN | FUNCTION |
|-----|----------|
| 1   | SCL      |
| 2   | SDA      |
| 3   | OUTPUT   |
| 4   | GND      |
| 5   | VCC      |

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

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

**Note3:** Referential weight 56.1g

## 3. I2C Devices Address

### 3.1 DIGITAL-TO-ANALOG CONVERTER,VOLTAGE OUTPUT

Device name : DAC8571

Device supplier : TI

Device address : 1001100

### 3.2. DIGITAL THERMOMETER AND THERMOSTAT

Device name: LM75

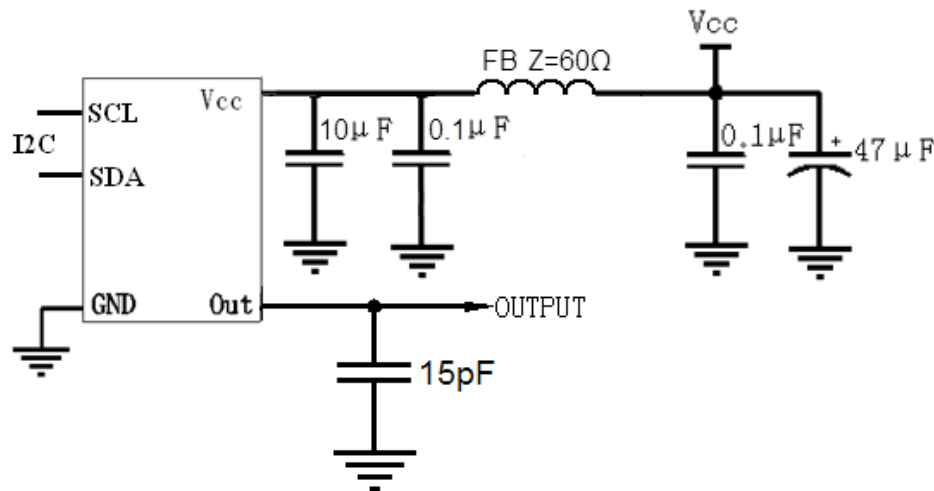
Device supplier: National

Device address: 1001000

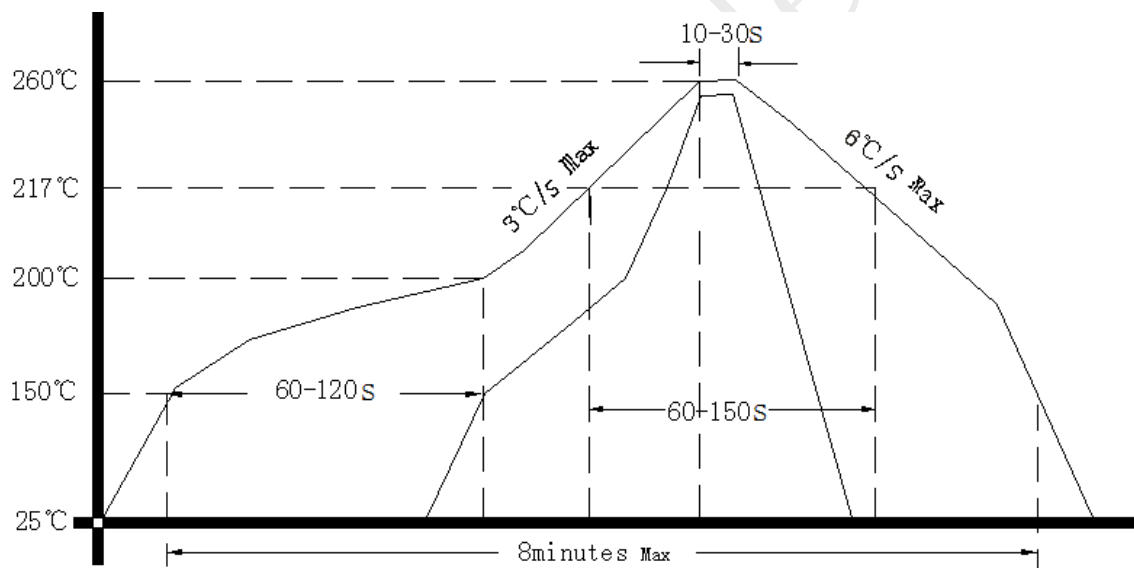
Note: More detailed information see the datasheet provide by the supplier.



#### 4. Test Circuit



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



#### 5. Package (mm)

