

Travelling Merchant: _____

DATASHEET

Standard: **T75B-M317-19.20MHz**

P/N: _____

| Plot | | | The Label |
|------------------|---------|----------|------------------------|
| Drew | Audited | Approved | Stamp, please! Thanks! |
| | | | |
| Date: 2022.09.26 | | | |

Guangdong Dapu Telecom Technology Co.,Ltd

Building 5, No.24, Industrial East Road, Songshanhu Park, Dongguan, Guangdong, P.R. China

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



Table of amendment

| Version | Revision contents | Prepared by | Revised date |
|---------|---|-------------|--------------|
| 1.0 | The first issued | Amway | 2020.04.17 |
| 1.1 | The “Mechanical Structure” “Package: Tape & Reel” changed | Amway | 2020.10.22 |
| 1.2 | The “Moisture Sensitivity Level” “Reflow Soldering Curve” changed, Add “Start up Time” “Aging Tolerance 20 Years” “Initial Frequency Tolerance” “Short Term” | Amway | 2022.09.26 |
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1. Electrical Parameters

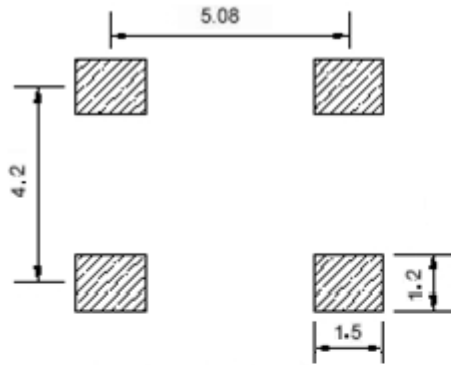
| MODEL: T75B-M317-19.20MHZ | | | | | | |
|---------------------------|---|------------|------|------------------|------------------|---|
| Item | Description | Parameters | | | Unit | Test Condition |
| | | Min. | Typ. | Max. | | |
| Output | Frequency | 19.20 | | | MHz | |
| | Output Waveform | HCMOS | | | | |
| | 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 (10%~90%) | | | 5 | ns | @25°C |
| | Start up Time | | | 3 | ms | Stabilization time to +/-0.5ppm of final frequency. |
| | Load | 15 | | | pF | |
| Frequency Stabilities | Frequency Tolerance vs. Operating Temperature Range | -0.05 | | +0.05 | $\times 10^{-6}$ | T_A varied from -40°C to 105°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{CC}=3.3V, V_c=1.65V, O_{load}=15\text{ pF}$. |
| | Initial Frequency Tolerance | -1 | | +1 | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A = 25^\circ\text{C}, V_{cc}=3.3V, V_c=1.65V$ within 30 days after ex-works. |
| | | -0.5 | | +0.5 | $\times 10^{-6}$ | Measurement referenced to frequency before reflow, tested with $T_A=25^\circ\text{C}$ and $V_{cc}=3.3V, V_c=1.65V, O_{load}=15\text{ pF}$. At least 4 hours of static placement at room temperature is necessary after completion of 2 times reflow. |
| | 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, $V_c=1.65V$ and $O_{Load}=15\text{ pF}$. |
| | Frequency Tolerance vs. Load | -0.05 | | +0.05 | $\times 10^{-6}$ | 5% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.65V, O_{Load}=15\text{ pF}$ |
| | Short Term | | 0.1 | 0.2 | $\times 10^{-9}$ | Allan Deviation (ADEV), tau=1 second, at constant temperature. |
| | Aging Tolerance Per Day | -0.01 | | +0.01 | $\times 10^{-6}$ | $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.65V$ and after 1h of operation. |
| | Aging Tolerance First Year | -1 | | +1 | $\times 10^{-6}$ | |
| Aging Tolerance 20 Years | -5 | | +5 | $\times 10^{-6}$ | | |



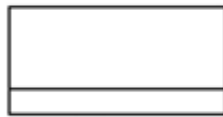
| | | | | | | |
|---------------------------------|--|--|------|------|--------------------|---|
| Power Supply | Current Consumption | | | 10 | mA | @25°C, V _{cc} =3.3V, V _c =1.65V, O _{load} =15pF. |
| | Supply Voltage | 3.13 | 3.3 | 3.47 | V | |
| Voltage Control Characteristics | Frequency Tuning Range | | | -8 | × 10 ⁻⁶ | V _c =0V. measurement referenced to V _c =1.65V |
| | | -1 | | +1 | × 10 ⁻⁶ | V _c =1.65V. measurement referenced to exactly 19.20MHz |
| | | +8 | | | × 10 ⁻⁶ | V _c =3.3V. measurement referenced to V _c =1.65V |
| | Linearity | | | 10 | % | |
| | Slope | Positive | | | | |
| | Input Impedance | 100 | | | | KΩ |
| Phase Noise | Phase Noise @25°C | | -85 | -80 | dBc/Hz | 10Hz |
| | | | -115 | -110 | | 100Hz |
| | | | -140 | -135 | | 1KHz |
| | | | -150 | -145 | | 10KHz |
| | | | -152 | -148 | | 100KHz |
| | | | -155 | -150 | | 1MHz |
| Environmental Conditions | Operable Temperature | -40 | | +105 | °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; 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 (°C) | -10~35°C | | | | |



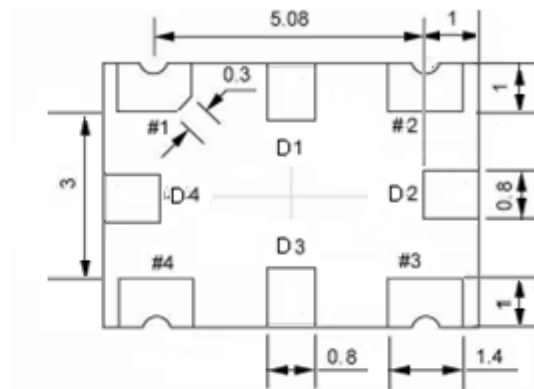
2. Mechanical Structure(mm)



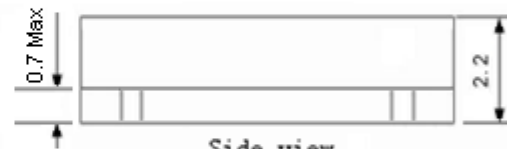
Solder pad layout



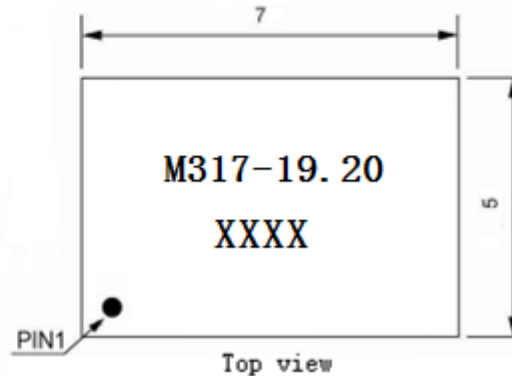
Right view



Bottom view



Side view



Top view

PIN FUNCTION

| PIN | NOTATION | FUNCTION |
|----------------|----------|-----------------|
| D1, D2, D3, D4 | NC | Not Connect |
| 1 | VC | Control Voltage |
| 2 | GND | GND |
| 3 | OUTPUT | RF Output |
| 4 | VCC | Supply Voltage |

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

Note2: The first two xx representative: week

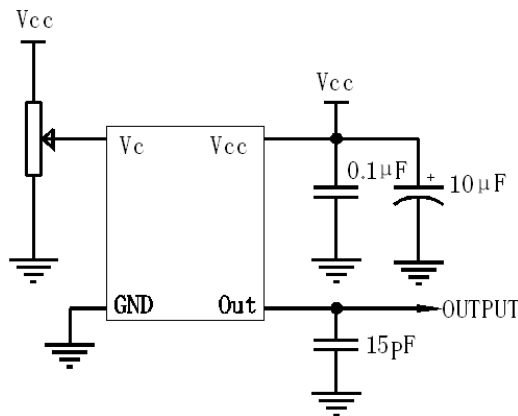
After two xx representative: year

Note3: Referential weight 0.2g

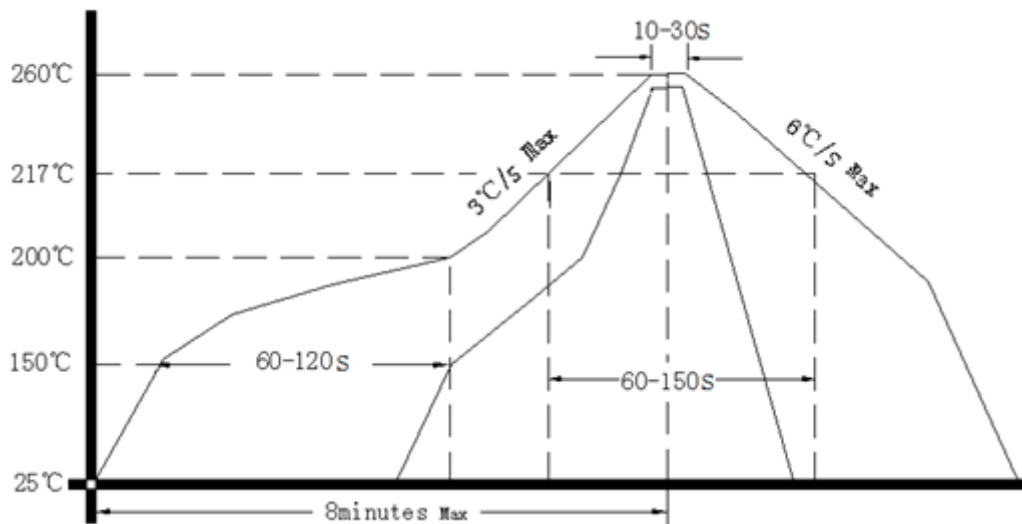
Note4: NC is not connect



3. Test circuit



4. Reflow Soldering Curve (RoHS)



Note: If soldering with a hot air gun, ensure the temperature < 320°C , soldering time < 15 seconds.

5. Package: Tape & Reel (mm)

