

Travelling Merchant: _____

DATASHEET

Standard: **T75B-E312-20.00MHz-A**

P/N: _____

| Plot | | | The Label |
|------------------|---------|----------|------------------------|
| Drew | Audited | Approved | Stamp, please! Thanks! |
| | | | |
| Date: 2014.09.30 | | | |

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Table of amendment

| Version | Revision contents | Prepared by | Revised date |
|---------|-------------------|--------------|--------------|
| 1.0 | The first issued | <i>Amway</i> | 2014.09.30 |
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1. Electrical Parameters

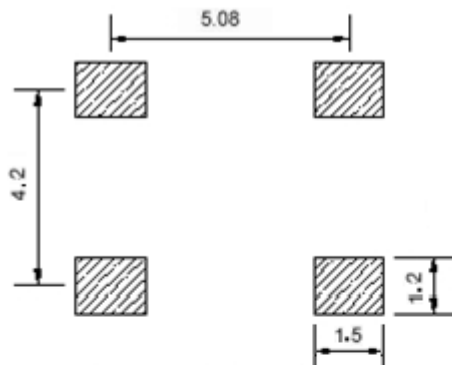
| MODEL: T75B-E312-20.00MHz-A | | | | | | |
|-----------------------------|--|------------|------|-------|------------------|---|
| Item | Description | Parameters | | | Unit | Test Condition |
| | | Min. | Typ. | Max. | | |
| Output | Frequency | 20.00 | | | MHz | |
| | Output Waveform | HCMOS | | | | |
| | 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 (10%~90%) | | | 8 | ns | @25°C |
| | Load | 15 | | | pF | |
| Frequency Stabilities | Frequency Tolerance vs. Operating Temperature Range | -0.9 | | +0.9 | $\times 10^{-6}$ | T_A varied from -20°C to 70°C, measurement referenced to frequency observed with $T_A = 25^\circ\text{C}$, $V_{cc} = 3.3V$, $V_c = 1.65V$, $O_{load} = 15\text{pF}$, temperature variable speed less than 2°C per minute. |
| | Initial Frequency Tolerance | -1 | | +1 | $\times 10^{-6}$ | Measurement referenced to frequency observed with $T_A = 25^\circ\text{C}$, $V_{cc} = 3.3V$, $V_c = 1.65V$ within 30 days after ex-works. |
| | Frequency Tolerance vs. Supply Voltage | -0.1 | | +0.1 | $\times 10^{-6}$ | 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 | -0.1 | | +0.1 | $\times 10^{-6}$ | 5% load change measurement referenced to frequency observed with $T_A = 25^\circ\text{C}$, $V_{cc} = 3.3V$, $V_c = 1.65V$, $O_{Load} = 15\text{pF}$ |
| | Aging Tolerance Per Day | -0.02 | | +0.02 | $\times 10^{-6}$ | $T_A = 25^\circ\text{C}$, $V_{cc} = 3.3V$, $V_c = 1.65V$ and after 1h of operation. |
| | Aging Tolerance 1 Year | -1 | | +1 | $\times 10^{-6}$ | |
| Power Supply | Current Consumption | | | 4 | mA | @25°C, $V_{cc} = 3.3V$, $V_c = 1.65V$, $O_{load} = 15\text{pF}$. |
| | Supply Voltage | 3.13 | 3.3 | 3.47 | V | |



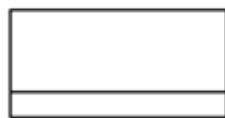
| | | | | | | |
|---------------------------------|--|--|------|------|------------------|--|
| Voltage Control Characteristics | Frequency Tuning Range | -15 | | -8 | $\times 10^{-6}$ | $V_c=0.65V$. measurement referenced to $V_c=1.65V$ |
| | | -1 | | +1 | $\times 10^{-6}$ | $V_c=1.65V$. measurement referenced to exactly 20.00MHz |
| | | +8 | | +15 | $\times 10^{-6}$ | $V_c=2.65V$. measurement referenced to $V_c=1.65V$ |
| | Linearity | | | 10 | % | |
| | Slope | Positive | | | | |
| | Input Impedance | 100 | | | | K Ω |
| Phase Noise | Phase Noise @25°C | | -88 | -83 | dBc/Hz | 10Hz |
| | | | -115 | -110 | | 100Hz |
| | | | -135 | -130 | | 1KHz |
| | | | -145 | -140 | | 10KHz |
| | | | -150 | -145 | | 100KHz |
| | | | -152 | -147 | | 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. | | | | | |



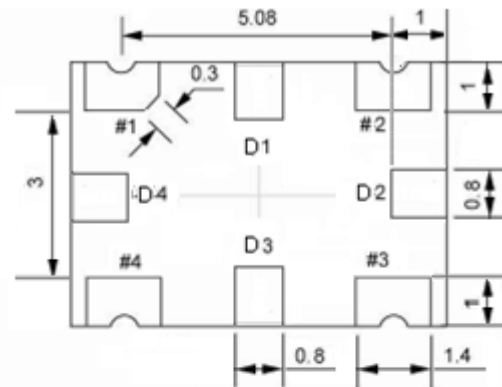
2. Mechanical Structure(mm)



Solder pad layout



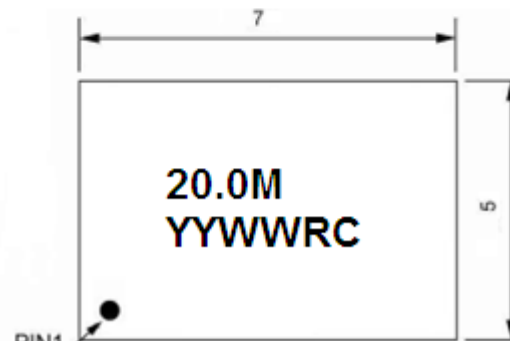
Right view



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 YY representative: year

The WW representative: week

Note3: Referential Weight 0.2g

Note4: NC is not connect



3. Test circuit



4. Reflow Soldering Curve (RoHS)



5. Package: Tape & Reel (mm)

