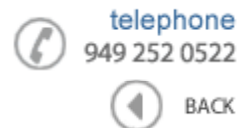


**Data Sheet**

Product Category: Crystal Oscillator

| Series Number | Package             | Description       | Last Modified |
|---------------|---------------------|-------------------|---------------|
| 320           | Metal Dip Half Size | Clock Oscillators | July 01 2005  |

**FEATURES**

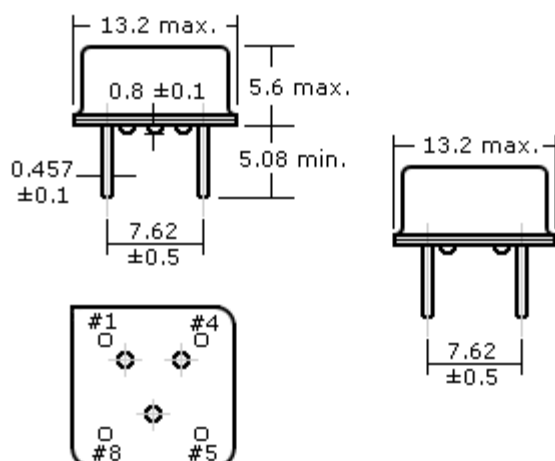
- HCMOS/TTL logic compatible
- Wide frequency range
- Low power consumption
- Industry standard package
- 5V or 3.3V optional
- RoHs / Lead Free compliant

**OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS**

| PARAMETERS                                                | CONDITIONS                  | CHARACTERISTICS                                        |                | UNITS |
|-----------------------------------------------------------|-----------------------------|--------------------------------------------------------|----------------|-------|
| Output Logic                                              | -                           | HCMOS / TTL Output                                     |                | -     |
| Input Voltage (VDD)                                       | -                           | 3.3 ±10%                                               | 5.0 ±10%       | VDC   |
| Frequency Range (f <sub>O</sub> )                         | -                           | 0.50 ~ 125.000                                         | 0.50 ~ 125.000 | MHz   |
| Operating Temperature (T <sub>OPR</sub> )                 | -                           | 0 ~ +70 (Std.) / -40 ~ 85 (Option)                     |                | °C    |
| Storage Temperature (T <sub>STG</sub> )                   | -                           | -55 ~ +125                                             |                | °C    |
| Overall Frequency Stability                               | a + b + c + d               | ±20, ±25, ±50, ±100 max.                               |                | PPM   |
|                                                           | (a) Frequency Tolerance     | Inclusive of Overall Stability                         |                | -     |
|                                                           | (b) Temperature Stability   | Inclusive of Overall Stability (Operating Temperature) |                | -     |
|                                                           | (c) Input Voltage Stability | Inclusive of Overall Stability (VDD ±5%)               |                | -     |
|                                                           | (d) Load Stability          | Inclusive of Overall Stability (RL ±5%)                |                | -     |
| Input Current (I <sub>DD</sub> )                          | -                           | 10 ~ 45 max.                                           | 15 ~ 85 max.   | mA    |
| Aging                                                     | @ 25°C                      | ±5 max.                                                |                | PPM/Y |
| Rise Time (T <sub>R</sub> ) / Fall Time (T <sub>F</sub> ) | < 66.660 MHz                | 10 max. (0.4V to 2.4V w/ TTL, Waveform / HCMOS)        |                | nS    |
| Rise Time (T <sub>R</sub> ) / Fall Time (T <sub>F</sub> ) | 66.660 MHz                  | 4 max. (0.4V to 2.4V w/ TTL, Waveform / HCMOS)         |                | nS    |
| Output Voltage High "1" VOH                               | TTL Load                    | 2.4 min.                                               |                | VDC   |
|                                                           | HCMOS Load                  | 2.7 min.                                               | VDD-0.5 min.   |       |
| Output Voltage Low "0" VOL                                | TTL Load                    | 0.4 max.                                               |                | VDC   |
|                                                           | HCMOS Load                  | 0.5 max.                                               |                |       |
| Duty Cycle                                                | -                           | 50 ±10 (Std.) / 50 ±5 (Option)                         |                | %     |
| Start-Up Time (T <sub>S</sub> )                           | -                           | 10 max.                                                |                | ms    |
| Jitter                                                    | (One Sigma)                 | ±25 max.                                               |                | ps    |

**PIN CONNECTIONS**

|    |                            |
|----|----------------------------|
| #1 | No Connection or Tri-State |
|----|----------------------------|

**PACKAGE DIMENSIONS (mm)**

|    |             |
|----|-------------|
|    | Enable High |
| #4 | Case Ground |
| #5 | Output      |
| #8 | Vdd         |

**PART NUMBER GUIDE**

| Series Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Frequency                                                                                            | Voltage Supply Option  | Frequency Tolerance & Stability (max.)                    | Operating Temp. (°C)          | Duty Cycle                   | Pin 1 Connection                                 | Gullwing                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------|-------------------------------|------------------------------|--------------------------------------------------|-------------------------------|
| <b>320</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>- 4.0 M</b>                                                                                       | <b>- 3</b>             | <b>E</b>                                                  | <b>N</b>                      | <b>- T</b>                   | <b>TS</b>                                        | <b>G</b>                      |
| Oscilent Clock Oscillators                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Enter your desired frequency e.g. <b>12.0M = 12.000MHz</b> See table below for standard frequencies. | 5 = 5VDC<br>3 = 3.3VDC | D = ±100 PPM<br>E = ±50 PPM<br>F = ±25 PPM<br>G = ±20 PPM | Blank* = 0~+70<br>N = -40~+85 | Blank* = 50±10%<br>T = 50±5% | NC = No Connection<br>TS = Tri-State Enable High | Blank* = Std.<br>G = Gullwing |
| <b>NOTE:</b> - Deviations on all parameters available. Please consult Oscilent for details.<br><b>DEFINITIONS:</b> - Click on the characteristic names above for definitions of that particular characteristic.<br><b>*STANDARDS:</b> - "Blank" part number selections indicate standard variables for that particular characteristic.<br><b>PACKAGING:</b> - Standard tube packaging, add <b>-TR</b> for Tape/Reel. Click <a href="#">here</a> for tape/reel specifications |                                                                                                      |                        |                                                           |                               |                              |                                                  |                               |

**STANDARD OSCILLATOR FREQUENCIES - GUIDE ONLY / OTHER FREQUENCIES AVAILABLE**

| FREQUENCY (1.000 - 9.8304MHz) | FREQUENCY (10.00 - 24.000MHz) | FREQUENCY (24.576 - 80.000MHz) |
|-------------------------------|-------------------------------|--------------------------------|
| 1.000                         | 10.00                         | 24.576                         |
| 1.2288                        | 11.0592                       | 25.000                         |
| 1.8432                        | 12.000                        | 25.175                         |
| 2.000                         | 12.288                        | 28.322                         |
| 2.4576                        | 12.800                        | 30.000                         |
| 3.579545                      | 14.31818                      | 32.000                         |
| 3.6864                        | 14.7456                       | 32.514                         |
| 4.000                         | 15.9744                       | 33.000                         |
| 4.9152                        | 16.000                        | 35.000                         |
| 5.000                         | 16.257                        | 40.000                         |

|                                                                               |           |        |
|-------------------------------------------------------------------------------|-----------|--------|
| 5.0688                                                                        | 16.384    | 48.000 |
| 6.000                                                                         | 17.734475 | 50.000 |
| 6.144                                                                         | 18.000    | 64.000 |
| 7.3728                                                                        | 18.432    | 65.000 |
| 8.000                                                                         | 19.6608   | 66.666 |
| 9.216                                                                         | 20.000    | 80.000 |
| 9.8304                                                                        | 24.000    | -      |
| <b>NOTE: Other frequencies available. PLEASE SPECIFY IN PART NUMBER GUIDE</b> |           |        |

**Oscilent Corporation** - CALL **949.252.0522****Series No.:** **320**

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