



Data Sheet



Product Category: SMD Oscillators

| Series Number | Package           | Description    | Last Modified |
|---------------|-------------------|----------------|---------------|
| 431           | 7 x 5 SMD Ceramic | Low Jitter 5pS | Jan. 01 2007  |

## FEATURES

- Ultra low jitter at 5 ps
- Low power consumption
- Standby function
- Tape and Reel
- Miniature profile
- 3.3V or 5.0V optional
- RoHs / Lead Free compliant



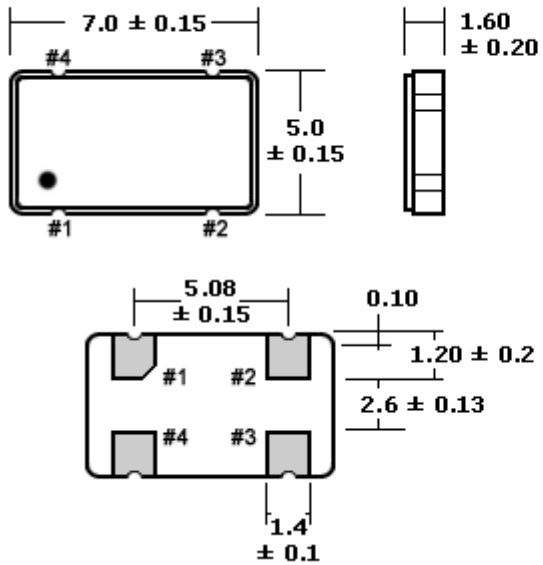
## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| 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> )                         | -                           | 1.544 ~ 155.520  |              | MHz   |
| Operating Temperature (T <sub>OPR</sub> )                 | -                           | 0 ~ +70 (Std.) / -40 ~ 85 (Option)                     |              | °C    |
| Storage Temperature (T <sub>STG</sub> )                   | -                           | -55 ~ +125   |              | °C    |
| Frequency Stability                                       | a + b + c + d               | ±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 ±10%)              |              | -     |
|   | (d) Load Stability          | Inclusive of Overall Stability (RL ±5%)                |              | -     |
| Input Current (I <sub>DD</sub> )                          | -                           | 10 ~ 35 max.   | 15 ~ 50 max. | mA    |
| Aging   | @ 25°C                      | ±5 max.  |              | PPM/Y |
| Rise Time (T <sub>R</sub> ) / Fall Time (T <sub>F</sub> ) | -                           | 8 max. (0.4V to 2.4V w/ TTL, 20% ~ 80% / HCMOS)        |              | nS    |
| PIN 1 Tri-State   | -                           | Option   |              | -     |
| 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> )                           | 1~ 35 MHz                   | 4 max.   |              | mS    |
|   | 35 ~ 125.000 MHz            | 10 max.  |              |       |
| Jitter  | (One Sigma)                 | ±5   |              | ps    |

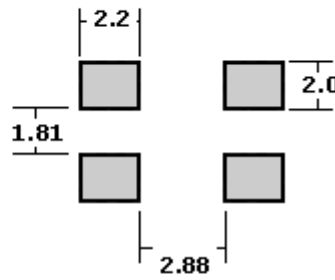
## PIN CONNECTIONS



**PACKAGE DIMENSIONS (mm)**



**Suggested Solder Pad Layout**



|    |  |
|----|--|
| #1 | No Connection or Tri-State Enable High |
| #2 | Case Ground                            |
| #3 | Output                                 |
| #4 | Vdd                                    |

**PART NUMBER GUIDE**

| Series Number            | Frequency   | Voltage Supply Option  | Frequency Tolerance & Stability (max.)     | Operating Temp. (°C)   | Duty Cycle                    | Pin 1 Connection                                 |
|--------------------------|---|------------------------|--|--|-------------------------------|--|
| <b>431</b>               | <b>- 12.0M</b>                                      | <b>- 3</b>             | <b>E</b>                                   | <b>N</b>   | <b>- T</b>                    | <b>TS</b>  |
| Oscilent SMD Oscillators | Enter your desired frequency e.g. 12.0M = 12.000MHz | 5 = 5VDC<br>3 = 3.3VDC | D = ±100 PPM<br>E = ±50 PPM<br>F = ±25 PPM | Blank* = 0~+70<br>C = -10~+70<br>D = -20~+70<br>L = -20~+75<br>N = -40~+85 | Blank* = 50±10%<br>T = -50±5% | NC = No Connection<br>TS = Tri-State Enable High |

**NOTE:** - Deviations on all parameters available. Please consult Oscilent for details.

**DEFINITIONS:** - Click on the characteristic names above, for definitions of the particular characteristic.

**\*STANDARDS:** - "Blank" part number selections, indicate standard variables for the particular characteristic.

**PACKAGING:** - Add **-TR** for Tape/Reel. Click [here](#) for tape/reel specifications

**Oscilent Corporation** - CALL **949.252.0522**

**Series No.: 431**

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