



# 5.0V/3.3V PLASTIC HCMOS SMD CLOCK OSCILLATOR MODEL: FSO SERIES

## FEATURES

- 5.0V / 3.3V Operation
- HCMOS/TTL Output
- Tri-State Enable/Disable
- Extended Temperature Range
- Tape and Reel (1,000 pcs. STD)

**DISCONTINUED**



**Quote it!**

| PART NUMBER SELECTION <a href="#">Learn More</a> - Internet Required |                    |                     |                                  |                            |                       |
|--|--------------------|---------------------|----------------------------------|----------------------------|-----------------------|
| Part Number  | Model Number       | V <sub>DD</sub> (V) | Frequency Stability <sup>1</sup> | Operating Temperature (°C) | Frequency Range (MHz) |
| 259-Frequency-xxxxx  | FSO-2 <sup>3</sup> | 5.0 ± 0.5           | ±100PPM                          | -20 ~ +70                  | 1.000 ~ 66.6667       |
| 547-Frequency-xxxxx  | FSO-2R             |                     | ±100PPM                          | -40 ~ +85                  | 1.000 ~ 66.6667       |
| 432-Frequency-xxxxx  | FSO-2S             | 3.3 ± 0.3           | ±50PPM                           | -20 ~ +70                  | 1.000 ~ 66.6667       |
| 433-Frequency-xxxxx  | FSO-3 <sup>3</sup> |                     | ±100PPM                          | -20 ~ +70                  | 1.000 ~ 66.6667       |
| 543-Frequency-xxxxx  | FSO-3R             |                     | ±100PPM                          | -40 ~ +85                  | 1.000 ~ 66.6667       |
| 434-Frequency-xxxxx  | FSO-3S             |                     | ±50PPM                           | -20 ~ +70                  | 1.000 ~ 66.6667       |

| ELECTRICAL CHARACTERISTICS                               |                              |              |
|--|------------------------------|--------------|
| PARAMETERS   | FSO-2 Series                 | FSO-3 Series |
|  | MAX (unless otherwise noted) |              |
| Frequency Range (F <sub>o</sub> )                        | 1.000 ~ 66.6667 MHz          |              |
| Input Current (I <sub>DD</sub> )                         |                              |              |
| 1.000 ~ 30.000 MHz                                       | 23mA                         | 9mA          |
| 30.000+ ~ 66.6667 MHz                                    | 35mA                         | 20mA         |
| Output Symmetry (50% V <sub>DD</sub> )                   | 40% ~ 60%                    |              |
| Rise Time (20% ~ 80% V <sub>DD</sub> ) (T <sub>R</sub> ) |                              |              |
| 1.000 ~ 30.000 MHz                                       | 8nS                          | 6nS          |
| 30.000+ ~ 66.6667 MHz                                    | 7nS                          | 6nS          |
| Fall Time (80% ~ 20% V <sub>DD</sub> ) (T <sub>F</sub> ) |                              |              |
| 1.000 ~ 30.000 MHz                                       | 8nS                          | 6nS          |
| 30.000+ ~ 66.6667 MHz                                    | 7nS                          | 6nS          |
| Output Voltage (V <sub>OL</sub> )                        | 0.4V                         |              |
| (V <sub>OH</sub> )                                       | 4.6V Min                     | 2.9V Min     |
| Output Current (I <sub>OL</sub> )                        | 16mA Min                     |              |
| (I <sub>OH</sub> )                                       | -16mA Min                    | -4mA Min     |
| Output Load (TTL)  | 10TTL                        | ---          |
| (HCMOS)  | 50pF                         | 30pF         |
| Start-up Time (T <sub>s</sub> )                          |                              |              |
| 1.000 ~ 30.000 MHz                                       | 4mS                          |              |
| 30.000+ ~ 66.6667 MHz                                    | 10mS                         |              |
| Enable/Disable Time <sup>2</sup>                         | 100nS                        |              |

<sup>1</sup> Inclusive of 25°C tolerance, operating temperature range, input voltage change, aging, and load change.

<sup>2</sup> An internal pullup resistor from pin 1 to pin 4 allows active output if pin 1 is left open.

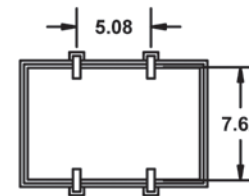
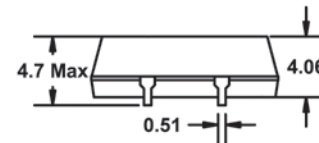
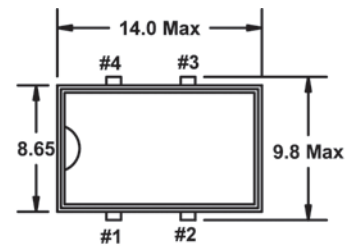
<sup>3</sup> The FSO-2 and FSO-3 models will also operate over -40°C ~ +85°C, but with a stability of ±200 PPM.

Note: A 0.01µF bypass capacitor should be placed between V<sub>DD</sub> (Pin 4) and GND (Pin 2) to minimize power supply line noise.

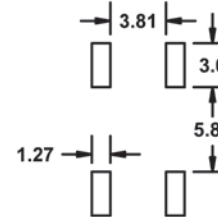
All specifications subject to change without notice. Rev. 6/1/04

Learn more about:  
[Part Marking Identification](#)  
[Tape and Reel Specification](#)  
[Mechanical Specification](#)

Internet required



**Recommended Solder Pad Layout**



**Pin Connections**

- #1 E/D      #3 Output  
#2 GND      #4 V<sub>DD</sub>

All dimensions are in millimeters.

| ENABLE / DISABLE FUNCTION         |                |
|-----------------------------------|----------------|
| INH (Pin 1)                       | OUTPUT (Pin 3) |
| OPEN <sup>2</sup>                 | ACTIVE         |
| '1' Level V <sub>IH</sub> ≥ 2.4 V | ACTIVE         |
| '0' Level V <sub>IL</sub> ≤ 0.6 V | High Z         |