

# 1.8V HCMOS SMD OSCILLATOR WITH STANDBY

## F4500 SERIES

### FEATURES

- 1.8V Operation
- HCMOS Output
- Low Power Consumption
- Standby Function
- Tape and Reel (2,000 pcs. STD)
- Pb Free



• MODEL NUMBER SELECTION			
Model Number	Frequency Stability <sup>1</sup>	Operating Temperature (°C)	Frequency Range (MHz)
F4500	±100PPM	-10 ~ +70	1.800 ~ 70.000
F4500R	±100PPM	-40 ~ +85	1.800 ~ 70.000
F4505	±50PPM	-10 ~ +70	1.800 ~ 70.000
F4505R	±50PPM	-40 ~ +85	1.800 ~ 70.000
F4506	±25PPM	-10 ~ +70	1.800 ~ 70.000
F4506R	±25PPM	-40 ~ +85	1.800 ~ 70.000
F4508	±20PPM	-10 ~ +70	1.800 ~ 70.000

• ELECTRICAL CHARACTERISTICS	
PARAMETERS	MAX (unless otherwise noted)
Frequency Range (F <sub>o</sub> )	1.800 ~ 70.000 MHz
Storage Temperature Range (T <sub>STG</sub> )	-55°C ~ +125°C
Supply Voltage (V <sub>DD</sub> )	1.8V ± 5%
Input Current (I <sub>DD</sub> )	
1.000 ~ 32.100 MHz	7mA
32.100+ ~ 70.000 MHz	15mA
Output Symmetry (50% V <sub>DD</sub> )	40% ~ 60%
Rise Time (20% ~ 80% V <sub>DD</sub> ) (T <sub>R</sub> )	
1.800 ~ 32.100 MHz	5nS
32.100+ ~ 70.000 MHz	3.5nS
Fall Time (80% ~ 20% V <sub>DD</sub> ) (T <sub>F</sub> )	
1.800 ~ 32.100 MHz	5nS
32.100+ ~ 70.000 MHz	3.5nS
Output Voltage (V <sub>OL</sub> )	20% V <sub>DD</sub>
(V <sub>OH</sub> )	80% V <sub>DD</sub> Min
Output Current (I <sub>OL</sub> )	2mA Min
(I <sub>OH</sub> )	2mA Min
Output Load (HCMOS)	15pF
Standby Current	10μA
Start-up Time (T <sub>s</sub> )	10mS
Output Disable Time <sup>2</sup>	300nS
Output Enable Time <sup>2</sup>	10mS

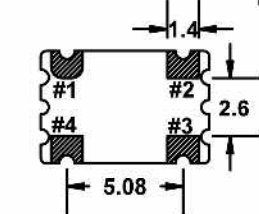
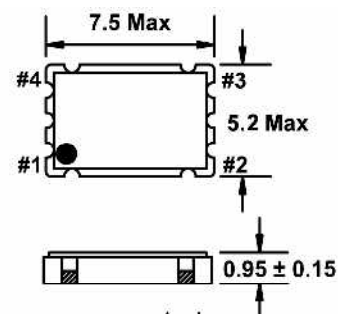
<sup>1</sup> Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging, shock, and vibration.

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

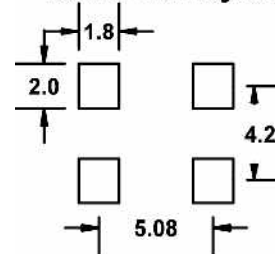
See page 30 for mechanical specifications, test circuits, and output waveform.

Note: A 0.01μF bypass capacitor should be placed between VDD (Pin 4) and GND (Pin 2) to minimize power supply line noise.

All specifications subject to change without notice. Rev. 07/9/03



### 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> ≥ 70% V <sub>DD</sub>	ACTIVE
'0' Level V <sub>IL</sub> ≤ 30% V <sub>DD</sub>	High Z

See page 60 for tape and reel specifications.