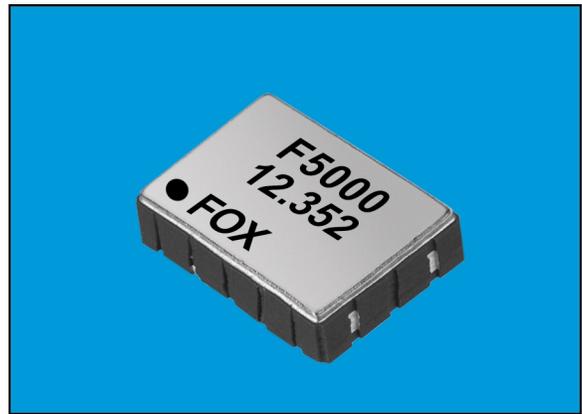


# VCXO SMD / VOLTAGE CONTROLLED CRYSTAL OSCILLATOR F5000

The F5000 series gives the frequency control features of a VCXO in a smaller, ceramic surface mount package. Frequency can be pulled a minimum to  $\pm 100$ PPM by varying a control voltage of 2.5 V applied to pin 1 by up to  $\pm 2$  V.

## FEATURES

- HCMOS/TTL Output
- Pullability
- Smaller Package than Traditional, Thru-Hole VCXO's
- Low Power Consumption
- -40 ~ +85°C Option (F5000R)



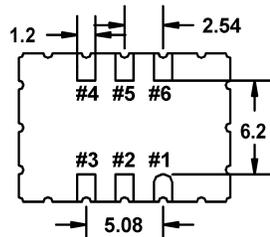
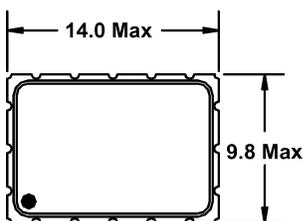
## ELECTRICAL CHARACTERISTICS (V<sub>DD</sub> = 5.0V, C<sub>L</sub> = Max)

PARAMETERS	FREQUENCY RANGE	CONDITIONS	MIN	MAX	UNITS
Frequency Range (F <sub>o</sub> )			2.000	30.000	MHz
Frequency Stability	2.000 ~ 30.000	All Conditions *	-50	+50	PPM
Temperature Range					
Operating (T <sub>OPR</sub> )	2.000 ~ 30.000		-10	+70	°C
Storage (T <sub>STG</sub> )	2.000 ~ 30.000		-30	+85	
Supply Voltage (V <sub>DD</sub> )	2.000 ~ 30.000		+4.75	+5.25	V
Control Voltage (V <sub>c</sub> )	2.000 ~ 30.000		+0.5	+4.5	V
Pullability	2.000 ~ 30.000	V <sub>c</sub> = 2.5 $\pm$ 2.0V	$\pm 100$		PPM
Input Current (I <sub>DD</sub> )	2.000 ~ 30.000			25	mA
Output Symmetry	2.000 ~ 30.000	2.5V	40	60	%
Rise Time (T <sub>R</sub> )	2.000 ~ 30.000	1.0V ~ 4.0V		10	nS
Fall Time (T <sub>F</sub> )	2.000 ~ 30.000	4.0V ~ 1.0V		10	nS
Output Voltage (V <sub>OL</sub> ) (V <sub>OH</sub> )	2.000 ~ 30.000	I <sub>OL</sub> = 3.2 mA I <sub>OH</sub> = 0.1 mA	4.5	0.5	V
Output Current (I <sub>OL</sub> ) (I <sub>OH</sub> )	2.000 ~ 30.000	V <sub>OL</sub> = 0.5V V <sub>OH</sub> = 4.5V		3.2 0.1	mA
Output Load	2.000 ~ 30.000	TTL Load HCMOS Load		8 15	LSTTL pF
Start-up Time (T <sub>S</sub> )	2.000 ~ 30.000			10	mS
Enable/Disable Time **	2.000 ~ 30.000			100	nS
Phase Noise	2.000 ~ 30.000	F <sub>o</sub> + 1 kHz F <sub>o</sub> + 10 kHz	-125 -130		dBc/Hz
<b>Frequency</b>	2.000 ~ 30.000				
Stability vs Voltage			-3.0	+3.0	PPM
Linearity			-10	+10	%
Modulation Bandwidth	2.000 ~ 30.000		20		kHz

## ENABLE/DISABLE FUNCTION \*\*

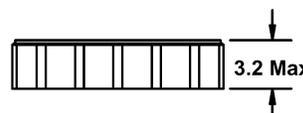
INH (Pin 2)	OUTPUT (Pin 4)
OPEN ***	ACTIVE
'1' Level V <sub>IH</sub> $\geq$ 2.2 V	ACTIVE
'0' Level V <sub>IL</sub> $\leq$ 0.80 V	High Z

\* Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging, shock, vibration and V<sub>c</sub> = 2.5V.  
 \*\* An internal pullup resistor from Pin 2 to Pin 6 allows active output if Pin 2 is left open.  
 \*\*\* All specifications subject to change without notice. Rev. 03/02/00

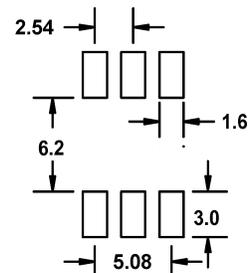


## Pin Connections

#1 V<sub>c</sub>      #4 Output  
 #2 E/D or NC    #5 NC  
 #3 GND      #6 V<sub>DD</sub>



## Recommended Solder Pad Layout



All dimensions are in millimeters.  
 See page 74 for tape and reel specifications.