

# HCMOS 2.5x2mm 3.3V SMD Oscillator



Model: F230 SERIES

RoHS Compliant / Pb Free

Rev. 6/5/2006

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## FEATURES

- 3.3V Operation
- Standby Function
- Tape and Reel (3,000 pcs. STD)

## • PART NUMBER SELECTION [Learn More](#) - Internet Required

Part Number	Model Number	Frequency Stability <sup>1</sup>	Operating Temperature (°C)	Frequency Range (MHz)
781-Frequency-xxxxx	F230	±100PPM	-20 ~ +70	0.840 ~ 75.000
781R-Frequency-xxxxx	F230R	±100PPM	-40 ~ +85	0.840 ~ 75.000
782-Frequency-xxxxx	F235	±50PPM	-20 ~ +70	0.840 ~ 75.000
782R-Frequency-xxxxx	F235R	±50PPM	-40 ~ +85	0.840 ~ 75.000
783-Frequency-xxxxx	F236	±25PPM	-20 ~ +70	0.840 ~ 75.000

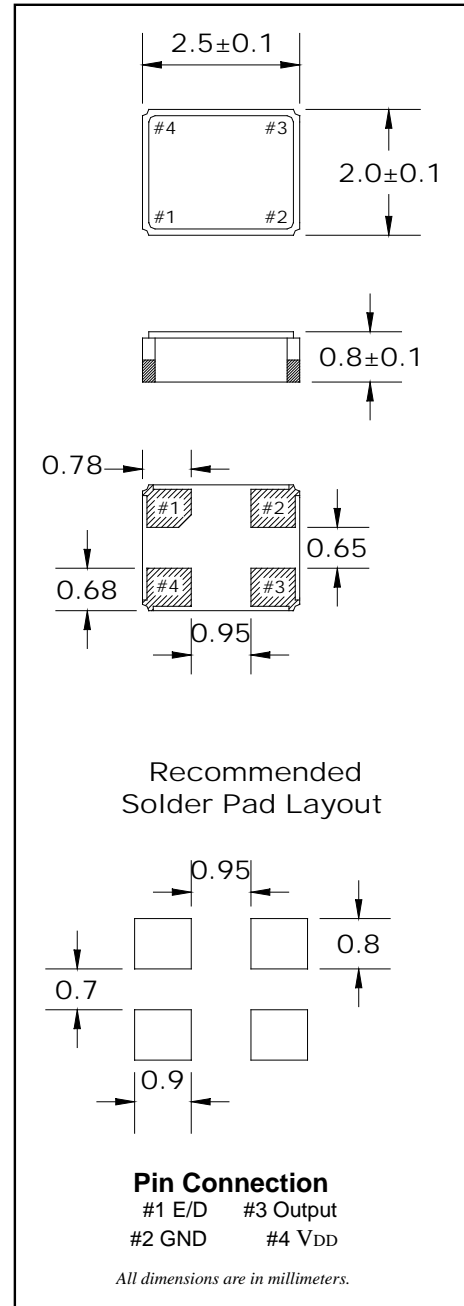
## • ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range (Fo)	0.840 ~ 75.000 MHz
Storage Temperature Range (T <sub>STG</sub> )	-55°C ~ +100°C
Supply Voltage (V <sub>DD</sub> )	3.3V ± 5%
Input Current (I <sub>DD</sub> )	
0.840 ~ 19.999 MHz	7mA
20.000+ ~ 39.999 MHz	13mA
40.000+ ~ 59.999 MHz	19mA
60.000+ ~ 75.000 MHz	24mA
Output Symmetry (50% V <sub>DD</sub> )	45% ~ 55%
Rise Time (10% ~ 90% V <sub>DD</sub> ) (T <sub>R</sub> )	10nS
Fall Time (90% ~ 10% V <sub>DD</sub> ) (T <sub>F</sub> )	10nS
Output Voltage (V <sub>OL</sub> )	10% V <sub>DD</sub>
(V <sub>OH</sub> )	90% V <sub>DD</sub> Min
Output Current (I <sub>OL</sub> )	5mA Min
(I <sub>OH</sub> )	-5mA Min
Output Load (HCMOS)	15pF
Standby Current	5µA
Start-up Time (T <sub>S</sub> )	10mS
Output Disable Time <sup>2</sup>	150nS
Output Enable Time <sup>2</sup>	10mS
Aging (T <sub>a</sub> =25°C: per year)	± 5 PPM
Reflow Soldering Temp	260°C / 10 Seconds
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au

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

Note: A 0.01µF capacitor should be placed between V<sub>DD</sub> (Pin 4) and GND (Pin2) to minimize power supply noise. All specifications subject to change without notice.



## • ENABLE / DISABLE FUNCTION

INH (Pin 1)	OUTPUT (Pin 3)
OPEN	ACTIVE
'1' Level V <sub>IH</sub> ≥ 80% V <sub>DD</sub>	ACTIVE
'0' Level V <sub>IL</sub> ≤ 20% V <sub>DD</sub>	High Z

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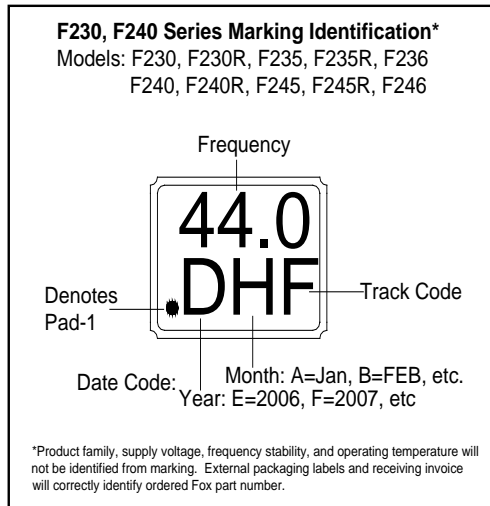
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**• TAPE SPECIFICATIONS (millimeters)**

MODEL	A	B	C	D	E	F	STD Reel QTY
F230 Series	Ø1.5	4.0	8.0	7.5	16.0	2.5	3,000

**• REEL SPECIFICATIONS (millimeters)**

MODEL	G	H	I	J	K	L	M
F230 Series	2.0	Ø13	Ø21	Ø80	Ø250	13.5	2.0

