

# HCMOS 2.5x2mm 1.8V Oscillator



Model: F210 SERIES

RoHS & REACH Compliant

Rev. 9/17/2012

Page 1 of 2

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## FEATURES

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

## • PART NUMBER SELECTION

Part Number	Model Number	Frequency Stability <sup>1</sup>	Operating Temperature (°C)	Frequency Range (MHz)
819-Frequency-xxxxx	F210	±100PPM	-10 ~ +70	0.750 ~ 50.000
819A-Frequency-xxxxx	F210R	±100PPM	-40 ~ +85	0.750 ~ 50.000
819B-Frequency-xxxxx	F215	±50PPM	-10 ~ +70	0.750 ~ 50.000
819C-Frequency-xxxxx	F215R	±50PPM	-40 ~ +85	0.750 ~ 50.000
819D-Frequency-xxxxx	F216	±25PPM	-10 ~ +70	0.750 ~ 50.000
819E-Frequency-xxxxx	F216R	±25PPM*	-40 ~ +85	1.800 ~ 50.000

## • ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range (Fo)	0.750 ~ 50.000 MHz
Storage Temperature Range (Tstg)	-55°C ~ +100°C
Supply Voltage (VDD)	1.8V ± 5%
Input Current (IDD)	
0.750 ~ 10.000 MHz	2.5mA
10.000+ ~ 20.000 MHz	3.5mA
20.000+ ~ 30.000 MHz	4.0mA
30.000+ ~ 40.000 MHz	4.5mA
40.000+ ~ 50.000 MHz	5.0mA
Output Symmetry (50% VDD)	45% ~ 55%
Rise Time (10% ~ 90% VDD)	10nS
Fall Time (90% ~ 10% VDD)	10nS
Output Voltage (VOL)	10% VDD
(VOH)	90% VDD Min
Output Current (IOL)	2mA Min
(IOH)	-2mA Min
Output Load (HCMOS)	15pF
Standby Current	10µA
Start-up Time (Ts)	10mS
Output Disable Time <sup>2</sup>	10µS
Output Enable Time <sup>2</sup>	10mS
Reflow Soldering Temp	260°C / 10 Seconds
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au

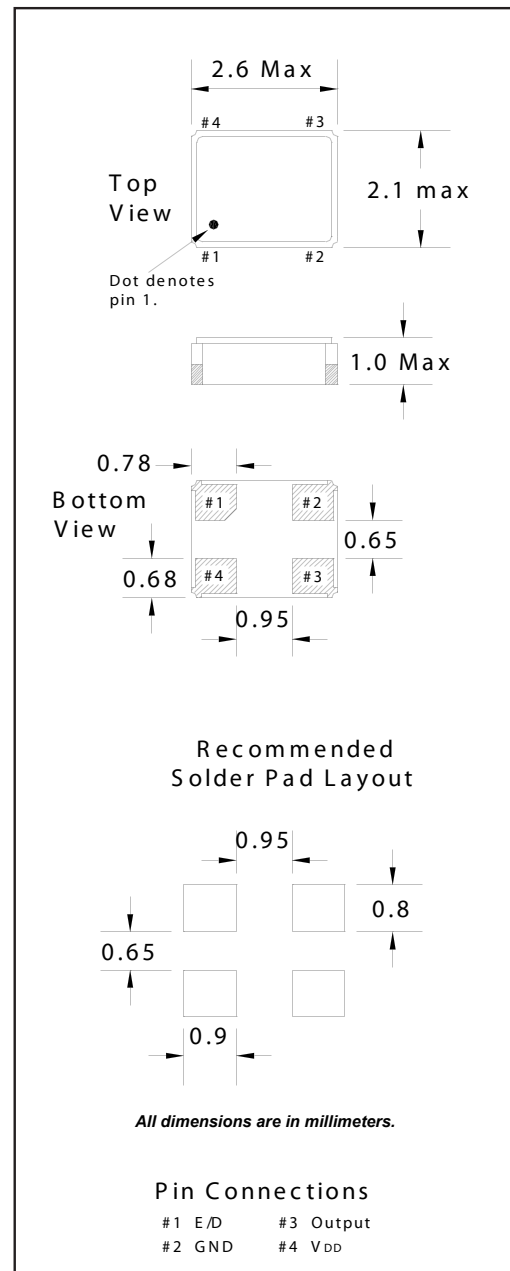
<sup>1</sup> Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, reflow, and one year aging \*Excludes Shock/Vibration.

<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 VDD (Pin 4) and GND (Pin2) to minimize power supply noise.

~Drawing is for reference to critical specifications defined by size measurements.

Certain non-critical visual attributes, such as side castellations, reference pin shape, etc. may vary. All specifications subject to change without notice.



All dimensions are in millimeters.

## Pin Connections

#1 E/D      #3 Output  
#2 GND      #4 VDD

## • ENABLE / DISABLE FUNCTION

Pin 1	OUTPUT (Pin 3)
OPEN <sup>2</sup>	ACTIVE
'1' Level $V_{IH} \geq 70\% V_{DD}$	ACTIVE
'0' Level $V_{IL} \leq 30\% V_{DD}$	High Z

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Need a  
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• TAPE SPECIFICATIONS (millimeters)							
MODEL	A	B	C	D	E	F	STD Reel QTY
F210 Series	∅1.5	4.0	4.0	3.5	8.0	1.15	3,000

• REEL SPECIFICATIONS (millimeters)							
MODEL	G	H	I	J	K	L	M
F210 Series	2.0	∅13	∅21	∅60	∅180	9.0	2.0

