



## Features

- HCMOS Output
- Stabilities to  $\pm 20$  PPM
- Temperature Ranges to  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Supply Voltage: 1.8V, 2.5V, 3.3V

1.8V ELECTRICAL CHARACTERISTICS	
PARAMETERS	MAX (Unless otherwise noted)
Frequency Range ( $F_0$ )	1.000 ~ 80.000 MHz
Storage Temperature Range ( $T_{STG}$ )	$-55 \sim +125^{\circ}\text{C}$
Supply Voltage ( $V_{DD}$ )	$1.8\text{V} \pm 10\%$
Input Current ( $I_{DD}$ )	
1.000 ~ 10.000 MHz	2 mA
10.000001 ~ 30.000 MHz	3 mA
30.000001 ~ 40.000 MHz	4 mA
40.000001 ~ 60.000 MHz	5 mA
60.000001 ~ 70.000 MHz	6 mA
70.000001 ~ 80.000 MHz	7 mA
Standby Current	10 $\mu\text{A}$
Output Symmetry (50% $V_{DD}$ )	45% ~ 55%
Rise/Fall Time (10%/90% $V_{DD}$ Levels) ( $T_R/T_F$ )	4.5 nS
Output Voltage ( $V_{OL}$ )	10% $V_{DD}$
( $V_{OH}$ )	90% $V_{DD}$ Min
Output Load (HCMOS)	15pF
Start-up Time ( $T_S$ )	5 mS
Output Disable Time 1	200 nS
Output Enable Time 1	5 mS
Maximum Solder Temp/Time	$260^{\circ}\text{C}$ / 10 Seconds x2
Moisture Sensitivity Layer	1
Termination Finish	Au (0.3~1 $\mu\text{m}$ ) over Ni (1.27~8.89 $\mu\text{m}$ )
Lead-Free	Yes
RoHS/REACH Compliant	Yes



ENABLE / DISABLE FUNCTION	
Pin <sup>1</sup>	Output (pin 3)
OPEN <sup>1</sup>	Active
'1' Level $V_{IH} \geq 70\%V_{DD}$	Active
'0' Level $V_{IL} \leq 30\%V_{DD}$	High Z

Available Options by Stability & Operating Temp for 1.8V <sup>2</sup>		
Frequency Stability	Operating Temperature (°C)	Frequency Range (MHz)
±100PPM	-20 ~ +70	1.0 ~ 80
±100PPM	-40 ~ +85	1.0 ~ 80
±50PPM	-20 ~ +70	1.0 ~ 80
±50PPM	-40 ~ +85	1.0 ~ 80
±30PPM	-20 ~ +70	1.0 ~ 80
±30PPM	-40 ~ +85	1.0 ~ 80
±25PPM	-20 ~ +70	1.0 ~ 80
±20PPM*	-20 ~ +70	1.0 ~ 80

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

<sup>2</sup>Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, Reflow, and one-year aging. \*Excludes Shock/Vibration.

2.5V ELECTRICAL CHARACTERISTICS	
PARAMETERS	MAX (Unless otherwise noted)
Frequency Range (F <sub>o</sub> )	1.000 ~ 80.000 MHz
Storage Temperature Range (T <sub>STG</sub> )	-55 ~ +125°C
Supply Voltage (V <sub>DD</sub> )	2.5V±10%
Input Current (I <sub>DD</sub> )	
1.000 ~ 20.000 MHz	3 mA
20.000001 ~ 30.000 MHz	4 mA
30.000001 ~ 40.000 MHz	5 mA
40.000001 ~ 50.000 MHz	6 mA
50.000001 ~ 60.000 MHz	7 mA
60.000001 ~ 70.000 MHz	8 mA
70.000001 ~ 80.000 MHz	9 mA
Standby Current	10 µA
Output Symmetry (50% V <sub>DD</sub> )	45% ~ 55%
Rise/Fall Time (10%/90% V <sub>DD</sub> Levels) (T <sub>R</sub> /T <sub>F</sub> )	4.5 nS
Output Voltage (V <sub>OL</sub> )	10% V <sub>DD</sub>
(V <sub>OH</sub> )	90% V <sub>DD</sub> Min
Output Load (HCMOS)	15 pF
Start-up Time (T <sub>S</sub> )	2 mS
Output Disable Time 1	200 nS
Output Enable Time 1	2 mS
Maximum Solder Temp/Time	260°C / 10 Seconds x2
Moisture Sensitivity Layer	1
Termination Finish	Au (0.3~1µm) over Ni (1.27~8.89µm)
Lead-Free	Yes
RoHS/REACH Compliant	Yes

ENABLE / DISABLE FUNCTION	
Pin <sup>1</sup>	Output (pin 3)
OPEN <sup>1</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

Available Options by Stability & Operating Temp for 2.5V <sup>2</sup>		
Frequency Stability	Operating Temperature (°C)	Frequency Range (MHz)
±100PPM	-20 ~ +70	1.0 ~ 80
±100PPM	-40 ~ +85	1.0 ~ 80
±50PPM	-20 ~ +70	1.0 ~ 80
±50PPM	-40 ~ +85	1.0 ~ 80
±30PPM	-20 ~ +70	1.0 ~ 80
±30PPM	-40 ~ +85	1.0 ~ 80
±25PPM	-20 ~ +70	1.0 ~ 80
±20PPM*	-20 ~ +70	1.0 ~ 80

<sup>1</sup> An internal pull-up resistor from pin 1 to pin 4 allows active output if pin 1 is left open

<sup>2</sup> Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, Reflow, and one-year aging. \*Excludes Shock/Vibration.

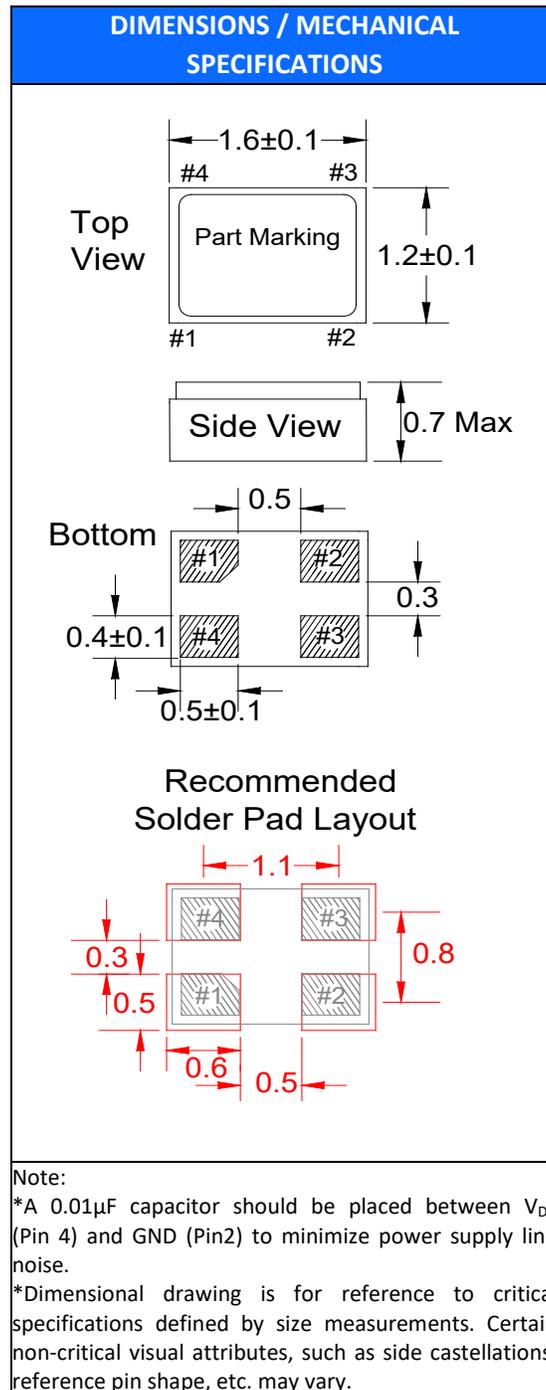
3.3V ELECTRICAL CHARACTERISTICS	
PARAMETERS	MAX (Unless otherwise noted)
Frequency Range (F <sub>0</sub> )	1.000 ~ 80.000 MHz
Storage Temperature Range (T <sub>STG</sub> )	-55 ~ +125°C
Supply Voltage (V <sub>DD</sub> )	3.3V±10%
Input Current (I <sub>DD</sub> )	
1.000 ~ 10.000 MHz	3 mA
10.000001 ~ 20.000 MHz	4 mA
20.000001 ~ 30.000 MHz	5 mA
30.000001 ~ 40.000 MHz	6 mA
40.000001 ~ 50.000 MHz	7 mA
50.000001 ~ 60.000 MHz	8 mA
60.000001 ~ 70.000 MHz	9 mA
70.000001 ~ 80.000 MHz	10 mA
Standby Current	10µA
Output Symmetry (50% V <sub>DD</sub> )	45% ~ 55%
Rise/Fall Time (10%/90% V <sub>DD</sub> Levels) (T <sub>R</sub> /T <sub>F</sub> )	4.5nS
Output Voltage (V <sub>OL</sub> )	10% V <sub>DD</sub>
(V <sub>OH</sub> )	90% V <sub>DD</sub> Min
Output Load (HCMOS)	15 pF
Start-up Time (T <sub>S</sub> )	2 mS
Output Disable Time 1	200 nS
Output Enable Time 1	2 mS
Maximum Solder Temp/Time	260°C / 10 Seconds x2
Moisture Sensitivity Layer	1
Termination Finish	Au (0.3~1µm) over Ni (1.27~8.89µm)
Lead-Free	Yes
RoHS/REACH Compliant	Yes

ENABLE / DISABLE FUNCTION	
Pin <sup>1</sup>	Output (pin 3)
OPEN <sup>1</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

Available Options by Stability & Operating Temp for 2.5V <sup>2</sup>		
Frequency Stability	Operating Temperature (°C)	Frequency Range (MHz)
±100PPM	-20 ~ +70	1.0 ~ 80
±100PPM	-40 ~ +85	1.0 ~ 80
±50PPM	-20 ~ +70	1.0 ~ 80
±50PPM	-40 ~ +85	1.0 ~ 80
±30PPM	-20 ~ +70	1.0 ~ 80
±30PPM	-40 ~ +85	1.0 ~ 80
±25PPM	-20 ~ +70	1.0 ~ 80
±20PPM*	-20 ~ +70	1.0 ~ 80

<sup>1</sup> An internal pull-up resistor from pin 1 to pin 4 allows active output if pin 1 is left open

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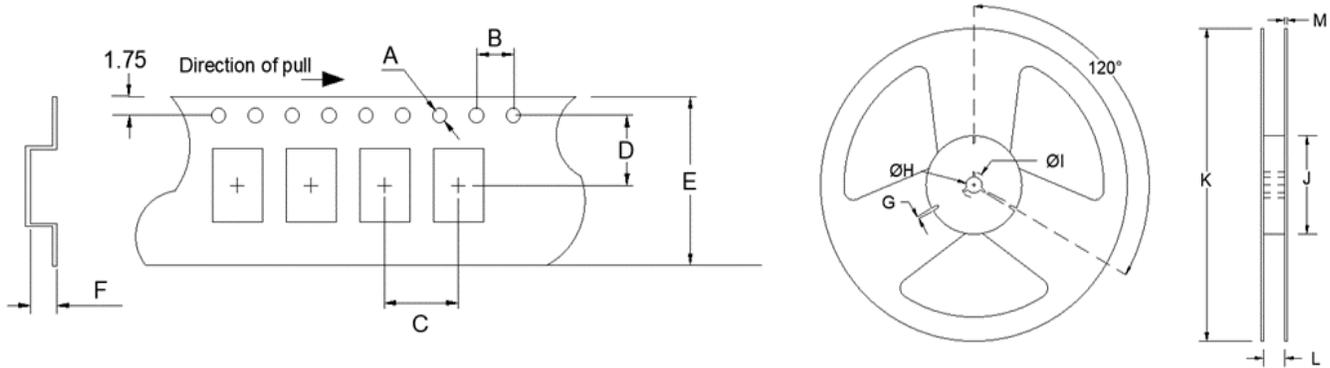
# FO8HS

(Former F610, F630, F640 Series)

1.6mm x 1.2mm  
**HCMOS SMD Oscillator**



TAPE SPECIFICATIONS (mm)							REEL SPECIFICATIONS (mm)						
A	B	C	D	E	F	REEL QTY	G	H	I	J	K	L	M
ø1.5	4.0	4.0	3.5	8.0	0.8	-T3=3,000 default -T1 = 1,000	2.0	ø13	ø21	ø60	ø180	9.0	1.2



### Available Options & Part Identification for HCMOS SMD Oscillator O8HS\*

Sample PN: **FO8HSCBM25.0-T3**

F	O8HS	C	B	M	25.0	-T3
<b>Fox</b>	<b>Model Number</b>	<b>Voltage</b> C = 3.3V±10% J = 2.5V±10% L = 1.8V±10%	<b>Stability</b> A = ±100 PPM B = ±50 PPM C = ±30 PPM D = ±25 PPM E = ±20 PPM	<b>Operating Temperature</b> F = -20 to +70°C M = -40 to +85°C	<b>Frequency (MHz)</b>	<b>Values Added Options</b> Blank = Bulk T1 = 1,000 pcs T3 = 3,000 pcs

\* Not all frequencies in the frequency range, or every combination of stability, temp range, and voltage available.

### Reliability Test Conditions

Please contact Abracon Quality Assurance department