

## Features

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

2.5/3.3V SPECIFICATIONS		
PARAMETERS	MAX (Unless otherwise noted)	
Frequency Range	13.5 ~ 250MHz	
Temperature Range		
Storage ( $T_{STG}$ )	$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$	
Supply Voltage ( $V_{DD}$ )	2.5V $\pm 10\%$	3.3V $\pm 10\%$
Input Current ( $I_{DD}$ )	50 mA	
Standby Current	15 $\mu\text{A}$	
Output Symmetry (50% $V_{P-P}$ )	45 % ~ 55 %	
Rise Time (20%~80% $V_{P-P}$ )	0.5 nS	
Fall Time (80%~20% $V_{P-P}$ )	0.5 nS	
Differential Output Voltage ( $V_{OD}$ )	0.247V ~ 0.454V	
Differential Offset Voltage ( $V_{OS}$ )	1.125V ~ 1.375V	
Differential Output Voltage Swing ( $V_{OPP}$ )	0.25Vpp min	0.35Vpp min
Output Load (HCMOS)	100 Ohms Typical	
Start-up Time ( $T_S$ )	10 mS	
Output Disable Time <sup>1</sup>	200 $\mu\text{S}$	
Output Enable Time <sup>1</sup>	10 mS	
Aging (per year @ 25C)	$\pm 3$ PPM	
Phase Jitter (12kHz~20MHz)	1 pS	

ENABLE / DISABLE FUNCTION	
Pin <sup>1</sup>	Out 1 (pin 4), Out 2 (pin 5)
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		
Frequency Stability <sup>2</sup>	Operating Temperature ( $^{\circ}\text{C}$ )	Frequency Range (MHz)
$\pm 100\text{PPM}$	$-10 \sim +70$	13.500 ~ 250.000
$\pm 100\text{PPM}$	$-20 \sim +70$	13.500 ~ 250.000
$\pm 100\text{PPM}$	$-40 \sim +85$	13.500 ~ 250.000
$\pm 50\text{PPM}$	$-10 \sim +70$	13.500 ~ 250.000
$\pm 50\text{PPM}$	$-20 \sim +70$	13.500 ~ 250.000
$\pm 50\text{PPM}$	$-40 \sim +70$	13.500 ~ 250.000
$\pm 25\text{PPM}$	$-10 \sim +85$	13.500 ~ 250.000
$\pm 25\text{PPM}$	$-20 \sim +70$	13.500 ~ 250.000
$\pm 25\text{PPM}^3$	$-40 \sim +85$	13.500 ~ 250.000
$\pm 20\text{PPM}^3$	$-20 \sim +70$	13.500 ~ 250.000

1.8V SPECIFICATIONS	
PARAMETERS	MAX (Unless otherwise noted)
Frequency Range	100 ~ 170MHz
Temperature Range	
Storage (T <sub>STG</sub> )	-55°C ~ +125°C
Supply Voltage (V <sub>DD</sub> )	1.8V±10%
Input Current (I <sub>DD</sub> )	66 mA
Standby Current	30 µA
Output Symmetry (50% V <sub>p-p</sub> )	45% ~ 55%
Rise Time (20%~80% V <sub>p-p</sub> )	0.7 nS
Fall Time (80%~20% V <sub>p-p</sub> )	0.7 nS
Differential Output Voltage (V <sub>OD</sub> )	0.33V typ
Differential Offset Voltage (V <sub>OS</sub> )	1.125V ~ 1.375V (1.25V typ)
Differential Output Voltage Swing (V <sub>OPP</sub> )	0.25Vp-p min
Output Load (HCMOS)	100 Ohms Typical
Start-up Time (T <sub>S</sub> )	10 mS
Output Disable Time <sup>1</sup>	200 nS
Output Enable Time <sup>1</sup>	10 mS
Aging (per year @ 25C)	±3 PPM
Phase Jitter (12kHz~20MHz)	1 pS (0.5pS typ)

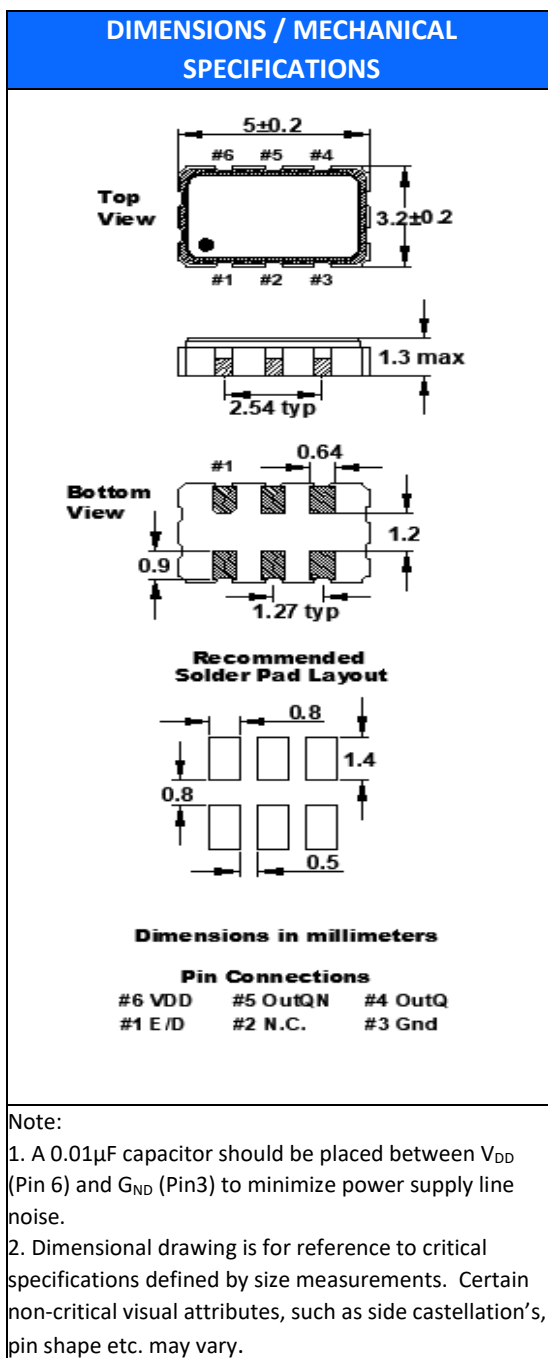
ENABLE / DISABLE FUNCTION	
Pin <sup>1</sup>	Out 1 (pin 4), Out 2 (pin 5)
OPEN <sup>1</sup>	Active
'1' Level V <sub>IH</sub> ≥ 70%V <sub>DD</sub>	Active
'0' Level V <sub>IL</sub> ≤ 30%V <sub>DD</sub>	High Z

Available Options by Stability & Operating Temp		
Frequency Stability <sup>2</sup>	Operating Temperature (°C)	Frequency Range (MHz)
±100PPM	-20 ~ +70	100.0 ~ 170.0
±100PPM	-40 ~ +85	100.0 ~ 170.0
±50PPM	-20 ~ +70	100.0 ~ 170.0
±50PPM	-40 ~ +85	100.0 ~ 170.0
±25PPM	-20 ~ +70	100.0 ~ 170.0
±25PPM <sup>3</sup>	-40 ~ +85	100.0 ~ 170.0

<sup>1</sup> An internal pull-up resistor from pin 1 to pin 6 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, one-year aging, shock, and vibration.

<sup>3</sup> Inclusive of 25°C tolerance and operating temperature range.



<b>STANDARD SPECIFICATIONS</b>	
PARAMETERS	MAX (Unless otherwise noted)
Maximum Soldering Temp / Time	260°C / 10 Seconds x 2
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au over Ni
Seal Method	Seam
Lead (Pb) Free	Yes
REACH/REACH Compliant	Yes

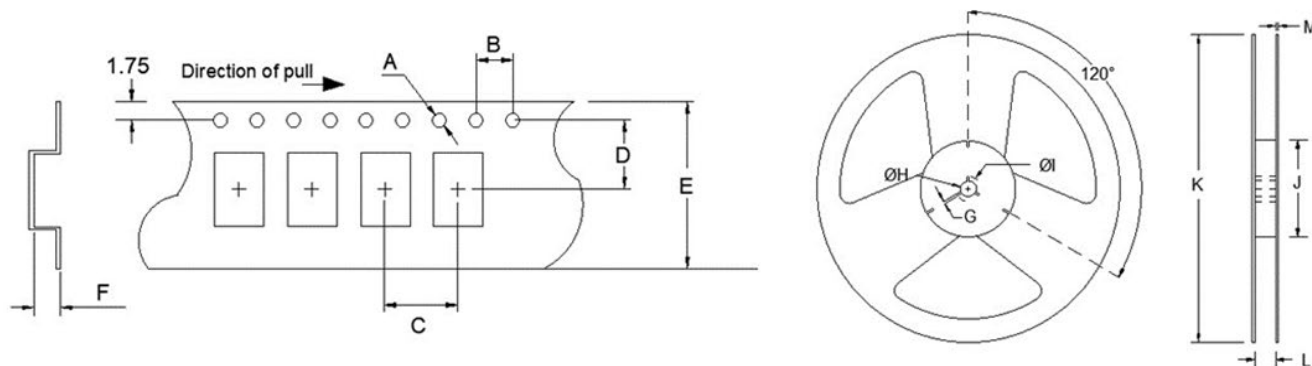
# FO5LS

(Former F530D/F540D families)

5.0mm x 3.2mm  
SMD LVDS 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	480	3.5	16.0	1.4	-T1 = 1,000	2.0	ø13	ø21	ø60	ø180	13.0	2.0



## Available Options & Part Identification for SMD LVDS Oscillator O5LS\*

Sample PN: FO5LSCDM125.0 -T1

F	O5LS	C	D	M	125.0	-T1
<u>Fox</u>	<u>Model Number</u>	<u>Voltage</u> K = 1.8V±5% J = 2.5V±10% <b>C = 3.3V±10%</b>	<u>Stability</u> A = ±100 PPM B = ±50 PPM <b>D = ±25 PPM</b> E = ±20 PPM	<u>Operating Temperature</u> E = -10 to +70°C F = -20 to +70°C <b>M = -40 to +85°C</b>	<u>Frequency (MHz)</u>	<u>Reel Quantity</u> Blank = Bulk T1 = 1,000 pcs

\* Not all frequencies in the frequency range, or every combination of stability, temp range, and voltage available. See stabilities and op temps for each V<sub>DD</sub>.

### Reliability Test Conditions

Please contact Abracon Quality Assurance department