

Features

- LVDS Output
- Stabilities to ± 20 PPM
- Operating Temperature Ranges to -40°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 μA	
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})	0.25V _{pp} min	0.35V _{pp} min
Output Load (HCMOS)	100 Ohms Typical	
Start-up Time (T_S)	10 mS	
Output Disable Time ¹	200 μS	
Output Enable Time ¹	10 mS	
Aging (per year @ 25C)	± 3 PPM	
Phase Jitter (12kHz~20MHz)	1 pS	

ENABLE / DISABLE FUNCTION	
Pin ¹	Out 1 (pin 4), Out 2 (pin 5)
OPEN ¹	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 ²	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 _{STG})	-55°C ~ +125°C
Supply Voltage (V _{DD})	1.8V±10%
Input Current (I _{DD})	66 mA
Standby Current	30 µA
Output Symmetry (50% V _{p-p})	45% ~ 55%
Rise Time (20%~80% V _{p-p})	0.7 nS
Fall Time (80%~20% V _{p-p})	0.7 nS
Differential Output Voltage (V _{OD})	0.33V typ
Differential Offset Voltage (V _{OS})	1.125V ~ 1.375V (1.25V typ)
Differential Output Voltage Swing (V _{opp})	0.25Vp-p min
Output Load (HCMOS)	100 Ohms Typical
Start-up Time (T _S)	10 mS
Output Disable Time ¹	200 nS
Output Enable Time ¹	10 mS
Aging (per year @ 25C)	±3 PPM
Phase Jitter (12kHz~20MHz)	1 pS (0.5pS typ)

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

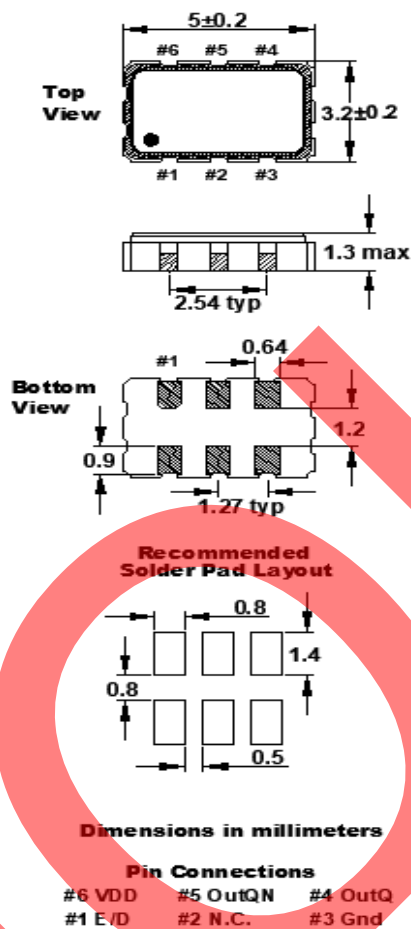
Available Options by Stability & Operating Temp		
Frequency Stability ²	Operating Temperature (°C)	Frequency Range (MHz)
±100PPM	-20 ~ +70	100.0 ~ 170.0
±100PPM	-40 ~ +85	100.0 ~ 170.0
±50PPM	-20 ~ +70	100.0 ~ 170.0
±50PPM	-40 ~ +85	100.0 ~ 170.0
±25PPM	-20 ~ +70	100.0 ~ 170.0
±25PPM ³	-40 ~ +85	100.0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

¹ An internal pull-up resistor from pin 1 to pin 6 allows active output if pin 1 is left open

² Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, Reflow, one-year aging, shock, and vibration.

³ Inclusive of 25°C tolerance and operating temperature range.

DIMENSIONS / MECHANICAL SPECIFICATIONS



Note:

1. A 0.01μF capacitor should be placed between V_{DD} (Pin 6) and G_{ND} (Pin 3) to minimize power supply line noise.
2. Dimensional drawing is for reference to critical specifications defined by size measurements. Certain non-critical visual attributes, such as side castellation's, pin shape etc. may vary.

STANDARD SPECIFICATIONS

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

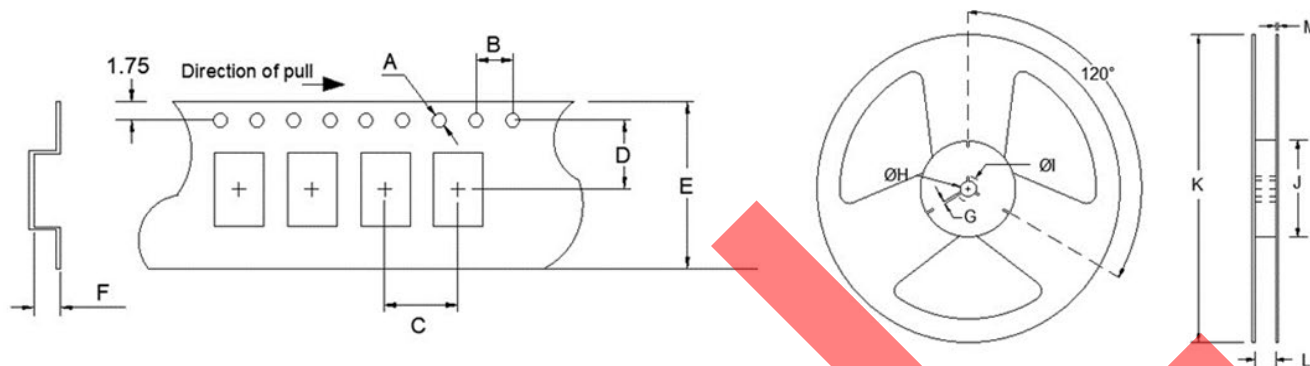
FO5LS

(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
Fox	Model Number	Voltage K = 1.8V±5% J = 2.5V±10% C = 3.3V±10%	Stability A = ±100 PPM B = ±50 PPM D = ±25 PPM E = ±20 PPM	Operating Temperature E = -10 to +70°C F = -20 to +70°C M = -40 to +85°C	Frequency (MHz)	Reel Quantity 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_{DD}.

Reliability Test Conditions

Please contact Abracon Quality Assurance department