



7x5mm LVPECL Oscillator

O7PS

(former F4600, F4620 Series)

DATASHEET

- LVPECL Output
- Stabilities to ± 20 PPM
- Temperature Ranges to -40°C to $+85^{\circ}\text{C}$
- Supply Voltages: 2.5V, 3.3V

2.5V ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range	40.000 ~ 325.000 MHz
Storage Temperature Range (T_{STG})	$-55 \sim +125^{\circ}\text{C}$
Supply Voltage (V_{DD})	$2.5\text{V} \pm 10\%$
Input Current (I_{DD})	88mA
Standby Current	30 μA
Output Symmetry (50% $V_{\text{P-P}}$ level)	
40.000 ~ 170.000 MHz	45% ~ 55%
>170.000 ~ 325.000 MHz	40% ~ 60%
Rise Time (20%~80% $V_{\text{P-P}}$)	1nS
Fall Time (80%~20% $V_{\text{P-P}}$)	1nS
Output Voltage (V_{OL})	1.195V
(V_{OH})	1.415V Min.
Output Load	50 Ohms to $V_{\text{DD}} - 2.0\text{V}$
Start-up Time (T_{S})	10mS
Output Disable Time ¹	200nS
Output Enable Time ¹	10mS
Phase Jitter (12kHz~20MHz BW)	0.3pS Typ.

ENABLE / DISABLE FUNCTION

Pin 1	Out 1 (Pin 4), Out 2 (Pin 5)
OPEN ¹	Active
'1' Level $V_{\text{IH}} \geq 70\% V_{\text{DD}}$	Active
'0' Level $V_{\text{IL}} \leq 30\% V_{\text{DD}}$	High Z

• Available Options by Stability & Operating Temp for 2.5V²

Frequency Stability ²	Operating Temperature ($^{\circ}\text{C}$)	Frequency Range (MHz)
$\pm 100\text{PPM}$	$-10 \sim +70$	40.000 ~ 325.000
$\pm 100\text{PPM}$	$-20 \sim +70$	40.000 ~ 325.000
$\pm 100\text{PPM}$	$-40 \sim +85$	40.000 ~ 325.000
$\pm 50\text{PPM}$	$-10 \sim +70$	40.000 ~ 325.000
$\pm 50\text{PPM}$	$-20 \sim +70$	40.000 ~ 325.000
$\pm 50\text{PPM}$	$-40 \sim +85$	40.000 ~ 325.000
$\pm 25\text{PPM}$	$-10 \sim +70$	40.000 ~ 325.000
$\pm 25\text{PPM}$	$-20 \sim +70$	40.000 ~ 325.000
$\pm 25\text{PPM}$	$-40 \sim +85$	40.000 ~ 200.000

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

² Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, reflow, and one-year aging. (*Excludes shock and vibration)



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Title / Description: O7PS SERIES STANDARD SPECIFICATIONS

Drawing Number: O7PS-DOC-1

Size: A

Part Number:

Cage: 61429

Draftsperson: BEC

Approved: MAJ

Revision Date: 05/05/2020



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3.3V ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range	40.000 ~ 325.000 MHz
Storage Temperature Range (T _{STG})	-55 ~ +125°C
Supply Voltage (V _{DD})	3.3V±10%
Input Current (I _{DD})	88mA
Standby Current	30µA
Output Symmetry (50%V _{P-P} level) 40.000 ~ 170.000MHz >170.000 ~ 325.000MHz	45% ~ 55% 40% ~ 60%
Rise Time (20%~80% V _{P-P})	1nS
Fall Time (80%~20% V _{P-P})	1nS
Output Voltage (V _{OL}) (V _{OH})	1.7V 2.2V Min.
Output Load	50 Ohms to VDD – 2.0V
Start-up Time (T _S)	10mS
Output Disable Time ¹	100nS
Output Enable Time ¹	10mS
Phase Jitter (12kHz~20MHz BW)	0.3pS 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 for 3.3V²

Frequency Stability ²	Operating Temperature (°C)	Frequency Range (MHz)
±100PPM	-10 ~ +70	40.000 ~ 325.000
±100PPM	-20 ~ +70	40.000 ~ 325.000
±100PPM	-40 ~ +85	40.000 ~ 325.000
±50PPM	-10 ~ +70	40.000 ~ 325.000
±50PPM	-20 ~ +70	40.000 ~ 325.000
±50PPM	-40 ~ +85	40.000 ~ 325.000
±25PPM	-10 ~ +70	40.000 ~ 325.000
±25PPM	-20 ~ +70	40.000 ~ 325.000
±25PPM	-40 ~ +85	40.000 ~ 280.000
±20PPM	-10 ~ +70	40.000 ~ 280.000
±20PPM	-20 ~ +70	40.000 ~ 280.000

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² Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, reflow, and one-year aging. (*Excludes shock and vibration)



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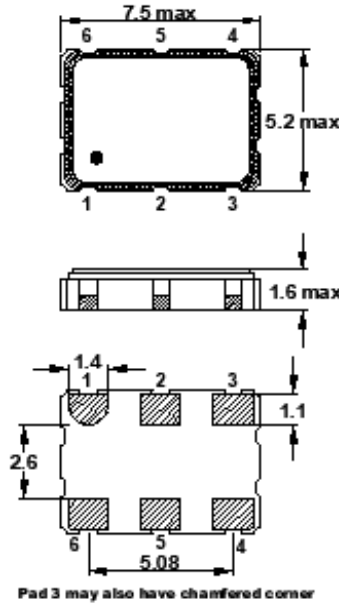
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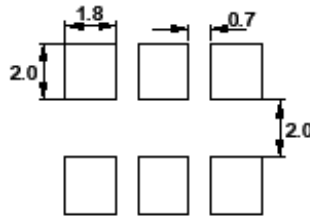
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DIMENSIONS / MECHANICAL SPECIFICATIONS



Recommended Solder Pad Layout



Pin Connections

#1 E/D	#4 Output_1
#2 N.C.	#5 Output_2
#3 GND	#6 V _{DD}

Maximum Soldering Temp / Time	260°C / 10 Seconds x2
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au over Ni
Seal Method	Seam
Lead (Pb) Free	Yes
ROHS/REACH Compliant	Yes

Notes:

*A 0.01μF capacitor should be placed between V_{DD} (Pin 4) and GND (Pin2) to minimize power supply line noise.

*Dimensional 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



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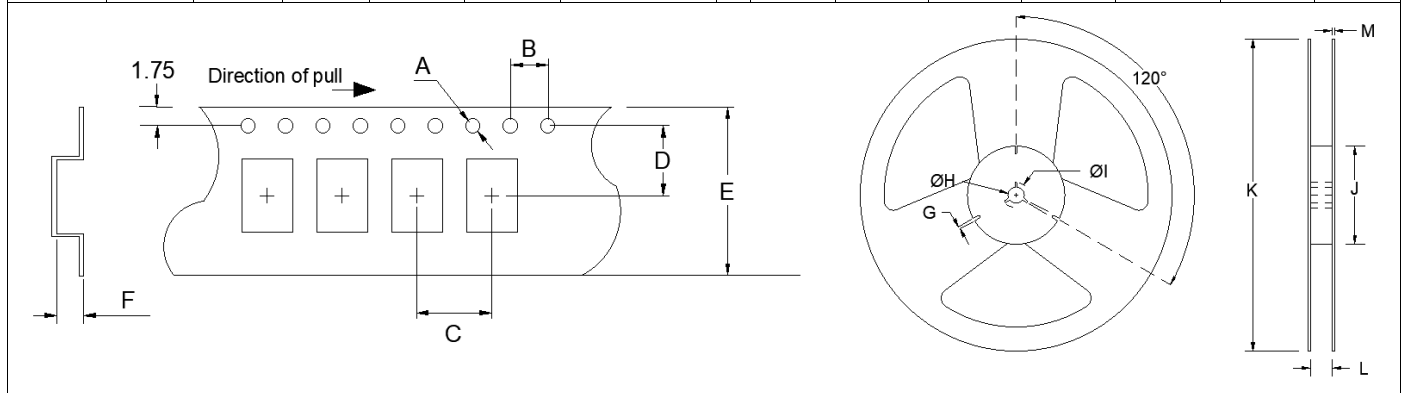
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Tape Specifications (millimeters)							Reel Specifications (millimeters)						
A	B	C	D	E	F	Std Reel Qty	G	H	I	J	K	L	M
Ø1.5	4.0	8.0	7.5	16.0	2.15	-T1 = 1,000 -T2 = 2,000	2.0	Ø13	Ø21	Ø80	Ø255	17.5	2.0



Available Options & Part Identification*

Example: **F O7PS C B M 62.5**

F	O7PS	C	B	M	62.5
Fox	Model Number	Voltage J = 2.5V±10% C = 3.3V±10%	Stability A = ±100PPM B = ±50PPM D = ±25PPM E = ±20PPM	Operating Temperature E = -10 to +70°C F = -20 to +70°C M = -40 to +85°C	Frequency

*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}.



Corporate Headquarters
5570 Enterprise Parkway Fort
Myers, FL 33905
<http://www.FOXONLINE.com>

Sales
1-888-GET-2-FOX (1-888-438-2369)
or
1-239-693-0099
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