



7x5mm LVPECL Oscillator

O7PS

(Former F4600, F4620 Series)

DATASHEET

- LVPECL Output
- Stabilities to ± 20 PPM
- Temperature Ranges as wide as -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 ~ 280.000 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})	88 mA
Standby Current	30 μA
Output Symmetry (50% $V_{\text{P-P}}$) 40.000 MHz ~ 170.000 MHz >170.000 MHz ~ 280.000 MHz	45% ~ 55% 40% ~ 60%
Rise Time (20%~80% $V_{\text{P-P}}$)	1 nS
Fall Time (80%~20% $V_{\text{P-P}}$)	1 nS
Output Voltage (V_{OL}) (V_{OH})	1.195V 1.415V Min.
Output Load	50 Ohms to VDD – 2.0V
Start-up Time (T_{S})	10 mS
Output Disable Time ¹	200 nS
Output Enable Time ¹	10 mS
Jitter 12kHz~20MHz RMS Period Cycle-to-Cycle	0.3 pS Typ. 2.5 pS Typ. 20 pS Typ.

ENABLE / DISABLE FUNCTION

Pin1	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 2.5V ²

Frequency Stability ²	Operating Temperature ($^{\circ}\text{C}$)	Frequency Range (MHz)
$\pm 100\text{PPM}$	$-10 \sim +70$	40.000 ~ 280.000
$\pm 100\text{PPM}$	$-20 \sim +70$	40.000 ~ 280.000
$\pm 100\text{PPM}$	$-40 \sim +85$	40.000 ~ 280.000
$\pm 50\text{PPM}$	$-10 \sim +70$	40.000 ~ 280.000
$\pm 50\text{PPM}$	$-20 \sim +70$	40.000 ~ 280.000
$\pm 50\text{PPM}$	$-40 \sim +85$	40.000 ~ 280.000
$\pm 25\text{PPM}^*$	$-10 \sim +70$	40.000 ~ 280.000
$\pm 25\text{PPM}^*$	$-20 \sim +70$	40.000 ~ 280.000
$\pm 25\text{PPM}^*$	$-40 \sim +85$	40.000 ~ 200.000

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, aging, shock, and vibration. (*Excludes shock and vibration)



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Title / Description: O7PS SERIES STANDARD SPECIFICATIONS

Drawing Number:

Size: A

Part Number:

Cage: 61429

Draftsperson: CMR

Approved: BEC

Revision Date: 08/09/2017



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

3.3V ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range	40.000 ~ 280.000 MHz
Storage Temperature Range (T_{STG})	$-55 \sim +125^{\circ}\text{C}$
Supply Voltage (V_{DD})	3.3V $\pm 10\%$
Input Current (I_{DD})	88 mA
Standby Current	30 μA
Output Symmetry (50% $V_{\text{P-P}}$) 40.000 MHz ~ 170.000 MHz >170.000 MHz ~ 280.000 MHz	45% ~ 55% 40% ~ 60%
Rise Time (20%~80% $V_{\text{P-P}}$)	1 nS
Fall Time (80%~20% $V_{\text{P-P}}$)	1 nS
Output Voltage (V_{OL}) (V_{OH})	1.7V 2.2V Min.
Output Load	50 Ohms to VDD – 2.0V
Start-up Time (T_{S})	10 mS
Output Disable Time ¹	100 nS
Output Enable Time ¹	10 mS
Jitter 12kHz~20MHz RMS Period Cycle-toCycle	0.3 pS Typ. 2.5 pS Typ. 20 pS Typ.

ENABLE / DISABLE FUNCTION

Pin1	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 3.3V ²

Frequency Stability ²	Operating Temperature ($^{\circ}\text{C}$)	Frequency Range (MHz)
$\pm 100\text{PPM}$	$-10 \sim +70$	40.000 ~ 280.000
$\pm 100\text{PPM}$	$-20 \sim +70$	40.000 ~ 280.000
$\pm 100\text{PPM}$	$-40 \sim +85$	40.000 ~ 280.000
$\pm 50\text{PPM}$	$-10 \sim +70$	40.000 ~ 280.000
$\pm 50\text{PPM}$	$-20 \sim +70$	40.000 ~ 280.000
$\pm 50\text{PPM}$	$-40 \sim +85$	40.000 ~ 280.000
$\pm 25\text{PPM}$	$-10 \sim +70^*$	40.000 ~ 280.000
$\pm 25\text{PPM}$	$-20 \sim +70^*$	40.000 ~ 280.000
$\pm 25\text{PPM}$	$-40 \sim +85^*$	40.000 ~ 280.000
$\pm 20\text{PPM}$	$-10 \sim +70^*$	40.000 ~ 170.000
$\pm 20\text{PPM}$	$-20 \sim +70^*$	40.000 ~ 170.000

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, aging, shock, and vibration. (*Excludes shock and vibration)



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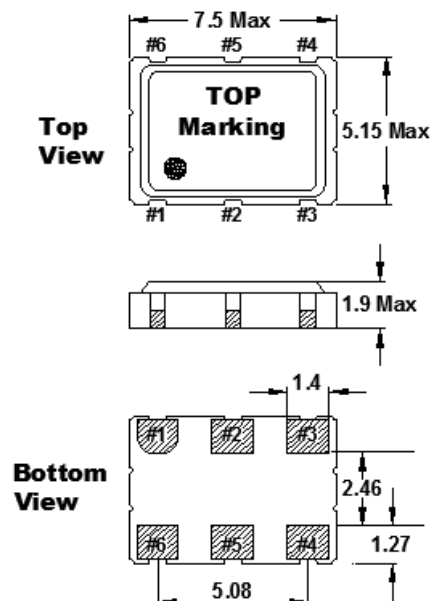
Revision Date: 08/09/2017



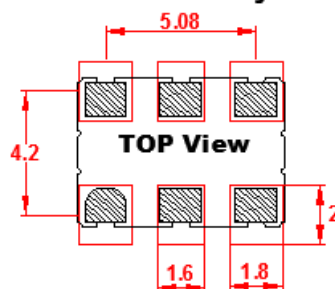
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DIMENSIONS / MECHANICAL SPECIFICATIONS



Recommended Solder Pad Layout



All dimensions are in millimeters.

Pin Connections

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

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

Notes:

*A 0.01μF capacitor should be placed between V_{DD} (Pin 6) and GND (Pin3) 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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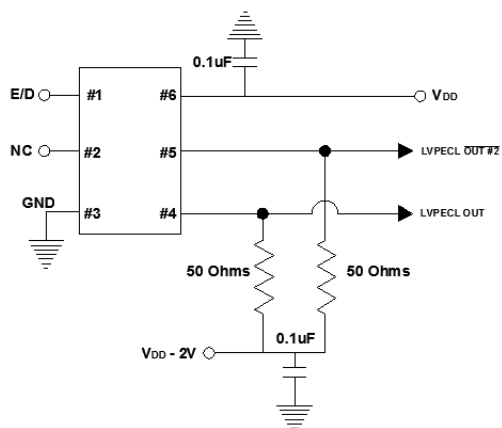
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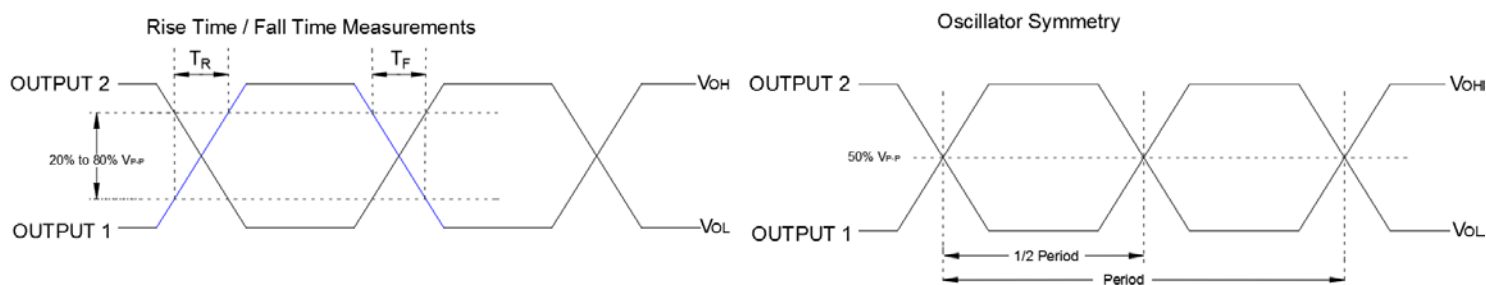
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• RECOMMENDED CIRCUIT

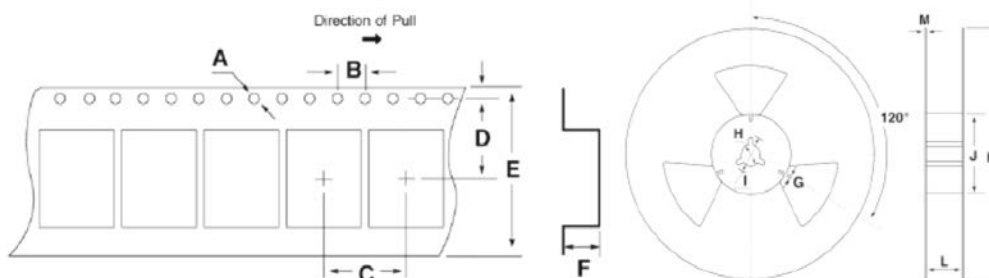


• WAVEFORM CHARACTERISTICS



• TAPE/REEL SPECIFICATIONS

Tape Specifications (millimeters)							Reel Specifications (millimeters)						
A	B	C	D	E	F	Std Reel Qty	G	H	I	J	K	L	M
Φ1.5	4.0	8.0	7.5	16.0	2.15	2,000	2.0	Φ13	Φ21	Φ80	Φ255	17.5	2.0



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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}.



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