HCMOS 7x5mm SMD Oscillator

O7HS

(former F4500, F4400, F4100 Series)

DATASHEET

- HCMOS Output
- Stabilities to ±20 PPM
- Temperature Ranges to -40ºC to +85ºC
- Supply Voltages: 1.8V, 2.5V, 3.3V

1.8V ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range (F_O)	0.012 ~ 160.000MHz
Storage Temperature Range (T_{STG})	-55 ~ +125°C
Supply Voltage (V_{DD})	1.8V±5%
Input Current (I_{DD})	
0.012 ~ 32.000MHz	5 mA
>32.000 ~ 70.000MHz	10 mA
>70.000 ~ 120.000MHz	15 mA
>120.000 ~ 160.000MHz	30 mA
Standby Current	10 µA
Output Symmetry (50% V_{DD})	40% ~ 60%
Rise/Fall Time (20%/80% V_{DD} Levels) (T_R/T_F)	
0.012 ~ 32.000MHz	5.0 nS
>32.000 ~ 120.000MHz	3.5 nS
>120.000 ~ 160.000MHz	3.0 nS
Output Voltage (V_{OL})	20% V_{DD}
(V_{OH})	80% V_{DD} Min
Output Load (HCMOS)	15 pF
Start-up Time (T_S)	10 mS
Output Disable Time [1]	300 nS
Output Enable Time [1]	10 mS

ENABLE / DISABLE FUNCTION	
Pin1	Output (pin 3)
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 for 1.8V

Frequency Stability	Operating Temperature (ºC)	Frequency Range (MHz)
±100PPM[2]	-10 ~ +70	0.012 ~ 160.000
±100PPM[2]	-20 ~ +70	0.012 ~ 160.000
±100PPM[2]	-40 ~ +85	0.012 ~ 160.000
±50PPM[2]	-10 ~ +70	0.012 ~ 160.000
±50PPM[2]	-20 ~ +70	0.012 ~ 160.000
±50PPM[2]	-40 ~ +85	0.012 ~ 160.000
±25PPM[2]	-10 ~ +70	0.012 ~ 160.000
±25PPM[2]	-20 ~ +70	0.012 ~ 160.000
±25PPM[3]	-40 ~ +85	0.012 ~ 160.000
±20PPM[3]	-10 ~ +70	0.012 ~ 160.000
±20PPM[3]	-20 ~ +70	0.012 ~ 160.000

[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, one-year aging, shock, and vibration.

[3] Inclusive of 25°C tolerance, operating temperature range.

Title / Description: O7HS SERIES STANDARD SPECIFICATIONS		
Drawing Number: O7HS-DOC-1		**Size:** A
Part Number:		**Cage:** 61429
Draftsperson: BEC	**Approved:** MAJ	**Revision Date:** 01/13/2020

2.5V ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range (F_O)	0.012 ~ 170.000MHz
Storage Temperature Range (T_{STG})	-55 ~ +125°C
Supply Voltage (V_{DD})	2.5V±5%
Input Current (I_{DD})	
0.012 ~ 32.000MHz	7mA
>32.000 ~ 50.000MHz	12mA
>50.000 ~ 125.000MHz	26mA
>125.000 ~ 160.000MHz	35mA
>160.000 ~ 170.000MHz	40mA
Standby Current	10µA
Output Symmetry (50% V_{DD})	
0.012 ~ 50.000MHz	45% ~ 55%
>50.000 ~ 200.000MHz	40% ~ 60%
Rise/Fall Time (10%/90% V_{DD} Levels) (T_R/T_F)	5nS
Output Voltage (V_{OL})	10%V_{DD}
(V_{OH})	90%V_{DD} Min
Output Load (HCMOS)	15pF
Start-up Time (T_S)	10mS
Output Disable Time [1]	150nS
Output Enable Time [1]	10mS

ENABLE / DISABLE FUNCTION	
Pin1	Output (pin 3)
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 for 2.5V

Frequency Stability	Operating Temperature (ºC)	Frequency Range (MHz)
±100PPM[2]	-10 ~ +70	0.012 ~ 170.000
±100PPM[2]	-20 ~ +70	0.012 ~ 170.000
±100PPM[2]	-40 ~ +85	0.012 ~ 170.000
±50PPM[2]	-10 ~ +70	0.012 ~ 170.000
±50PPM[2]	-20 ~ +70	0.012 ~ 170.000
±50PPM[2]	-40 ~ +85	0.012 ~ 170.000
±25PPM[2]	-10 ~ +70	0.012 ~ 170.000
±25PPM[2]	-20 ~ +70	0.012 ~ 170.000
±25PPM[3]	-40 ~ +85	0.012 ~ 170.000
±20PPM[3]	-10 ~ +70	0.012 ~ 170.000
±20PPM[3]	-20 ~ +70	0.012 ~ 170.000

[1] An internal pull-up resistor from pin 1 to pin 4 allows active output if pin 1 is left open
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[3] Inclusive of 25°C tolerance, operating temperature range.

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3.3V ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Frequency Range (F_O)	0.012 ~ 170.000MHz
Storage Temperature Range (T_{STG})	-55 ~ +125°C
Supply Voltage (V_{DD})	3.3V±10%
Input Current (I_{DD})	
0.012 ~ 0.040MHz	3 mA
>0.040 ~ 1.500MHz	6 mA
>1.500 ~ 32.000MHz	15 mA
>32.000 ~ 50.000MHz	20 mA
>50.000 ~ 67.000MHz	25 mA
>67.000 ~ 170.000MHz	40 mA
Standby Current	10 µA
Output Symmetry (50% V_{DD})	
0.012 ~ 50.000MHz	45% ~ 55%
>50.000 ~ 170.000MHz	40% ~ 60%
Rise/Fall Time (10%/90% V_{DD} Levels) (T_R/T_F)	
0.012 ~ 80.000MHz	6 nS
>80.000 ~ 125.000MHz	4 nS
>125.000 ~ 170.000MHz	3 nS
Output Voltage (V_{OL})	10% V_{DD}
(V_{OH})	90% V_{DD} Min
Output Load (HCMOS)	15 pF
Start-up Time (T_S)	10 mS
Output Disable Time [1]	150 nS
Output Enable Time [1]	10 mS

ENABLE / DISABLE FUNCTION	
Pin1	Output (pin 3)
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 for 3.3V

Frequency Stability	Operating Temperature (ºC)	Frequency Range (MHz)
±100PPM[2]	-10 ~ +70	0.012 ~ 170.000
±100PPM[2]	-20 ~ +70	0.012 ~ 170.000
±100PPM[2]	-40 ~ +85	0.012 ~ 170.000
±50PPM[2]	-10 ~ +70	0.012 ~ 170.000
±50PPM[2]	-20 ~ +70	0.012 ~ 170.000
±50PPM[2]	-40 ~ +85	0.012 ~ 170.000
±25PPM[2]	-10 ~ +70	0.012 ~ 170.000
±25PPM[2]	-20 ~ +70	0.012 ~ 170.000
±25PPM[3]	-40 ~ +85	0.012 ~ 170.000
±20PPM[3]	-10 ~ +70	0.012 ~ 170.000
±20PPM[3]	-20 ~ +70	0.012 ~ 170.000

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

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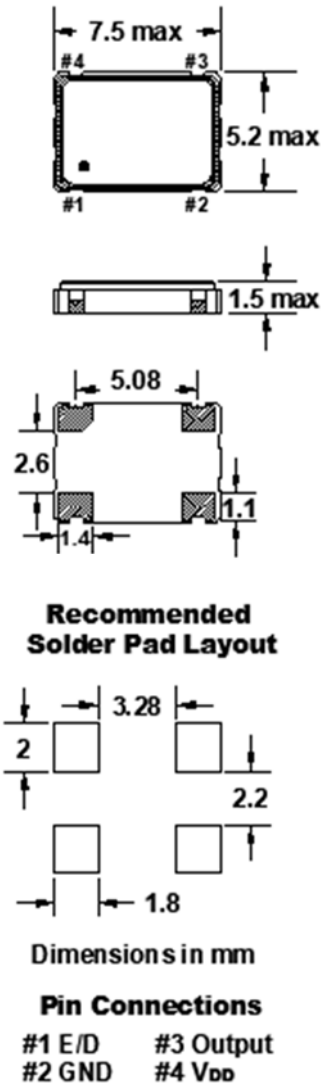
[3] Inclusive of 25°C tolerance, operating temperature range.

DIMENSIONS / MECHANICAL SPECIFICATIONS



Recommended Solder Pad Layout

Dimensions in mm

Pin Connections

#1 E/D	#3 Output
#2 GND	#4 V_{DD}

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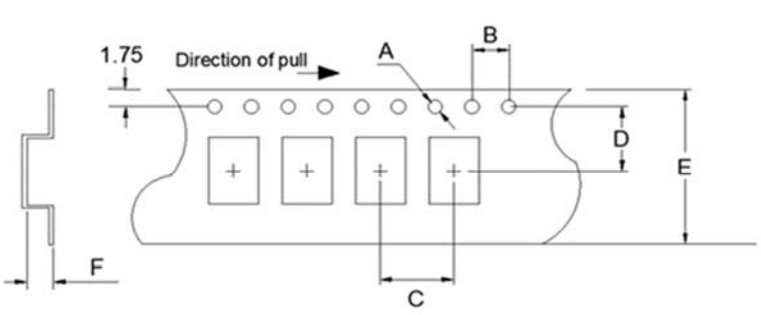
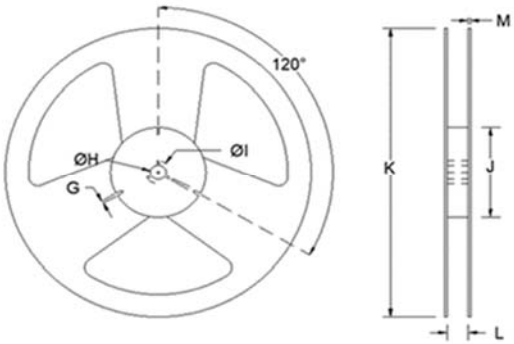
Tape Specifications (millimeters)								Reel Specifications (millimeters)						
A	B	C	D	E	F	Reel Qty		G	H	I	J	K	L	M
Ø1.5	4.0	8.0	7.5	16.0	2.15	-T1 = 1,000 -T2 = 2,000		2.0	Ø13	Ø21	Ø80	Ø255	17.5	2.0





Available Options & Part Identification*

Example: F O7HS C B M 25.0

F	O7HS	C	B	M	25.0
Fox	Model Number	Voltage	Stability	Operating Temperature	Frequency(MHz)
		K = 1.8V±5% H = 2.5V±5% **C = 3.3V±10%**	A = ±100PPM **B = ±50PPM** D = ±25PPM E = ±20PPM	E = -10 to +70ºC F = -20 to +70ºC **M = -40 to +85ºC**	

*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
http://www.FOXONLINE.com/repdisty

Tech Support
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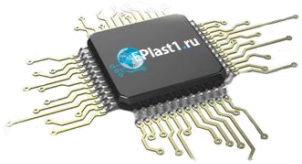
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.