EUROQUARTZ

QuikXO HC_JF OSCILLATOR

7 x 5 x 1.8mm — *4 Frequency Switchable Oscillator*

FEATURES

- **User switchable to provide 4 different frequencies output**
- **Integrated phase jitter performance of 150fs rms**
- **Supports all formats: CMOS, LVPECL, LVDS, HCSL and CML**

RoHS

DESCRIPTION

The HC_JF crystal oscillators are able to be delivered in days. The parts have gained their position in the precision frequency control market by the ability to deliver samples for prototypes at low cost quickly, and to offer fast delivery for volume production.

GENERAL SPECIFICATIONS at Ta = +25°C

Model	HCTJF	HCPJF	HCDJF	HCCJF	HCQJF
Output Logic	LVCMOS	LVPECL	LVDS	HCSL	CML
Supply Voltage	+1.8 Vdd ±5%	--	--	+1.8 Vdd ±5%	+1.8 Vdd ±5%
	+2.5 Vdd ±10%	+2.5 Vdd ±10%	+2.5 Vdd ±10%	+2.5 Vdd ±10%	+2.5 Vdd ±10%
	+3.3 Vdd ±10%	+3.3 Vdd ±10%	+3.3 Vdd ±10%	+3.3 Vdd ±10%	+3.3 Vdd ±10%
Available Frequency Range	15~250MHz	15~2100MHz	15~2100MHz	15~700MHz	15~2100MHz
Load	15pF	50Ω into Vdd -2V or Thevenin equivalent	100Ω between output and compl. Output	50Ω to GND	50Ω to Vdd
Output Logic 'HIGH' '1'	90% Vdd min.	Vdd -1.03V min. Vdd - 0.6V max.	1.4V typical 1.6V max.	Vdd: 0.66V min. Vdd: 1.15V max.	Vdd -0.85V min. Vdd -0.32V max.
Output Logic 'LOW' '0'	10% Vdd max.	Vdd -1.85V min. Vdd - 1.6V max.	1.1V typical 0.9V max.	Vdd: 0.0V min. Vdd: 0.15V max.	Vdd -0.6V min. Vdd = max.
Current Consumption (Vdd = +3.3V)	75mA typ. 90mA max.	100mA typ. 120mA max.	75mA typ. 90mA max.	94mA typ. 115mA max.	70mA typ. 85mA max.
Current with O/P Disabled	62mA typ.	99mA typ.	74mA typ.	93mA typ.	69mA typ.
Rise/Fall Time	0.35ns max. (10%~90% wavef.)	0.35ns max. (20%~80% wavef.)	0.35ns max. (20%~80% wavef.)	0.35ns max. (20%~80% wavef.)	0.35ns max. (20%~80% wavef.)

Phase Jitter, rms (typical) (12kHz to 20MHz)	155.250MHz: 140fs : 312.500MHz: 147fs : 644.530MHz: 141fs : 1500MHz: 147fs : 2000MHz: 155fs				
Frequency Stability Codes	Frequency Stability over Operating Temp. Range	±25ppm	±50ppm	±100ppm	
	Commercial *(-10° to +70°C)*	*A*	*B*	*C*	
	Industrial *(-40° to +85°C)*	*D*	*E*	*F*	
Duty Cycle	50%±5%				
Start-up Time	5ms typical, 10ms maximum				
Ageing at 25°C	±3ppm maximum for first year at 25°C ambient t.				
Storage Temp. Range	-55° to +150°C				
OUTPUT ENABLE FUNCTION					
OE Control on pin 1	70% of Vdd (min.) To enable Output				
	30% of Vdd (max.) To Disable output				
Output Enable Time	2.5ms max.				
Output Disable Time	10µs max.				
FREQUENCY SELECTION FUNCTION					
FS0 Control on Pad 8	70% Vdd min. to Logic Level '1'				
	30% Vdd min. to Logic Level '0'				
FS1 Control on Pad 7	70% Vdd min. to Logic Level '1'				
	30% Vdd min. to Logic Level '0'				
Frequency Select Timing	2.5ms (max.)				
Frequency Configurations	Frequency outputs 1 ~4 setting based on the logic lvels in Table 1.				

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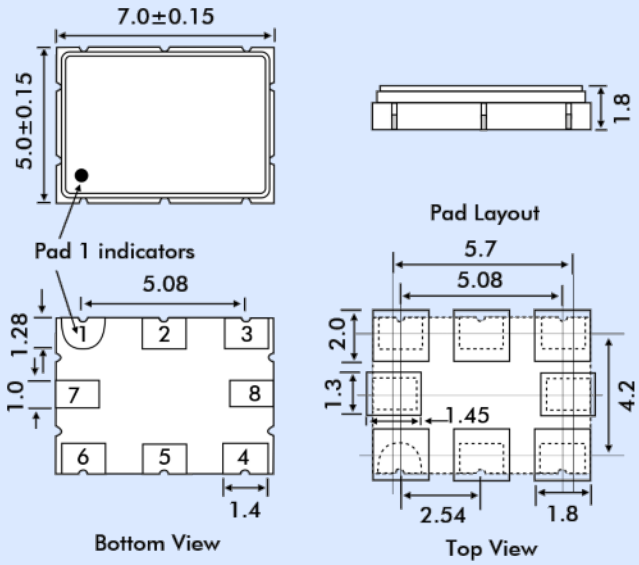
OUTLINE DIMENSIONS (Unit: mm) **SUGGESTED PAD LAYOUT FOR SMDs**



Frequency Selection Configurations

FS1	FS0	Freq. Output
0	0	Freq. 1
0	1	Freq. 2
1	0	Freq. 3
1	1	Freq. 4

Pad Connections

1 OE Control
2 No connection
3 Ground
4 CMOS: Output
Differential : Output
5 CMOS: Not used for CMOS
Differential: Complimentary Output
6 Supply Voltage
7 FS1 Control
8 FS0 Control

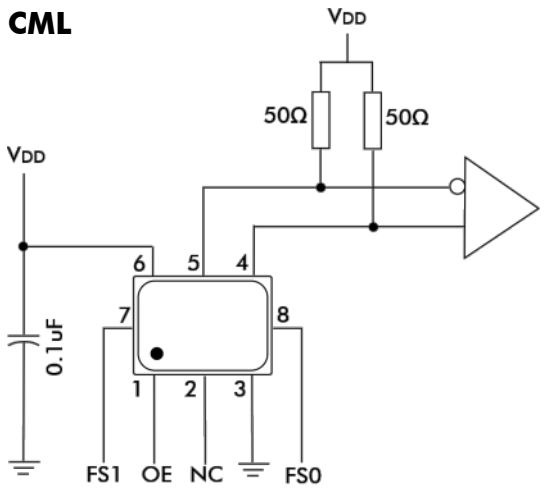
PART NUMBER FORMAT AND EXAMPLE

EXAMPLE: 3HCTJF5781 - E - 156/250/622/1024

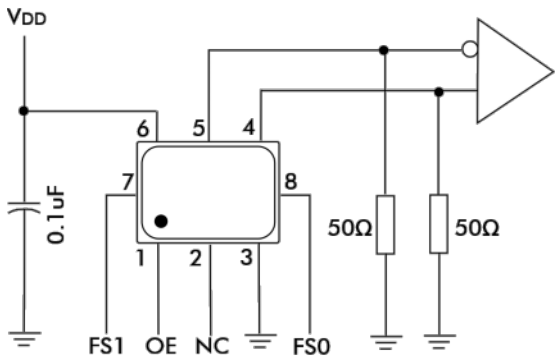
3	HCTJF	578	-	1	-	E	156	/	250	/	622	/	1024
Supply Voltage '3' for 3.3V '25' for 2.5V '18' for 1.8V	HCTJF: CMOS HCPJF: LVPECL HCDJF: LVDS HCCJF: HCSL HCQJF: CML	Package Size '578': 7 x 5mm		Pin 1: OE		Freq. Stability Code E: ±50ppm over -40° to +85°C. Other temp. stabilities are available	156.250 Freq. 1 (MHz)		250.000 Freq. 2 (MHz)		622.080 Freq. 3 (MHz)		1024.0 Freq. 4 (MHz)

TEST CIRCUITS

CML



HCSL



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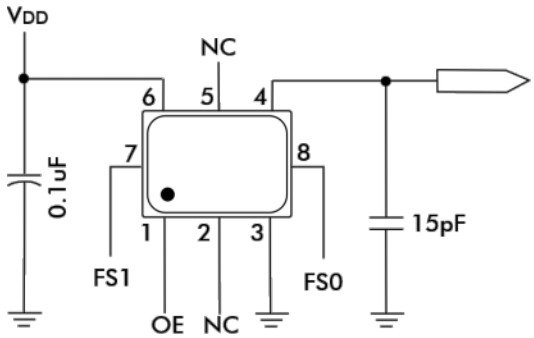
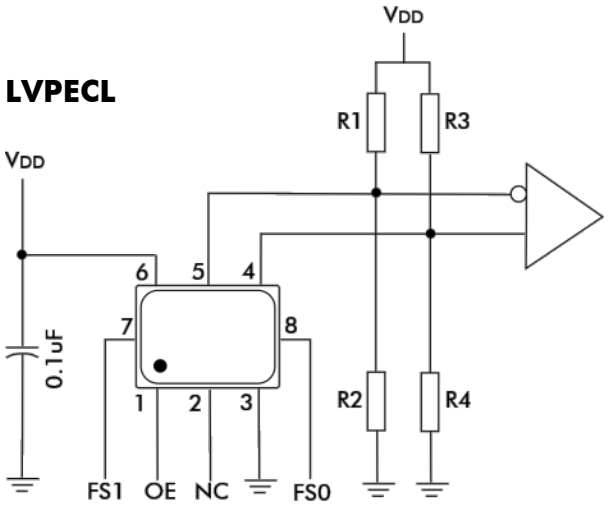
TEST CIRCUITS

HCMOS



LVPECL



LVDS