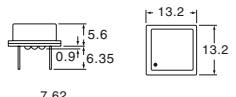
CARDINAL COMPONENTS, INC. FIPO™ Field Instantly Programmable Oscillators

The **CPP Series** is a Standard series and is available in Styles 1, 4, 5, 7 and 8. The frequency range is 1.000MHz ~ 133.000MHz for 5V and 1.000MHz for 3.3V. The **CPPL Series** is an Ultra Low Jitter series and is available in Styles 1, 4, 5, 7 and 8. The frequency range is 1.000MHz ~ 133.000MHz for 5V, 1.000MHz ~ 100.000MHz for 3.3V

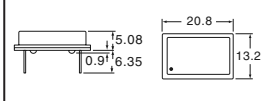
The **CPPFX Series** is an Extended Temperature, High Stability series and is available in Style 7 only. The frequency range is 1.000MHz ~ 133.000MHz for both 5V and 3.3V. The temperature range is -40°C ~ 85°C and the frequency stability is ±25ppm.

Fig. 1 — (Style 4) Half Size, 8-Pin Dip



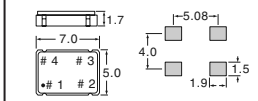
Pin Connection	
1	Control
4	GND
5	Output
8	VDD

Fig. 2 — (Style 1) Full Size 14 Pin Dip



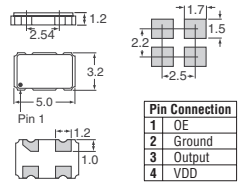
Pin Connection	
1	Control
7	GND
8	Output
14	VDD

Fig. 3 — (Style 7) 5x7 Ceramic SMD



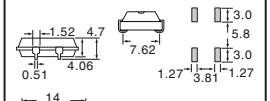
Pin Connection	
1	Control
2	GND
3	Output
4	VDD

Fig. 4 — (Style 5) 3.2 x 5 Ceramic SMD



Pin Connection	
1	OE
2	Ground
3	Output
4	VDD

Fig. 5 — (Style 8) Plastic SMD



Pin Connection	
1	Control
2	GND
3	Output
4	VDD

Example Part Number:

CPP/CPPL/CPPFX □□ - □□□□□□ -ND

#1 Output	
C	CMOS
T	TTL

#2 Package Style	
1	Full Size
4	Half Size
5	3.2 x 5 Ceramic
7	5 x 7 Ceramic
8	Plastic SMD

CPPFX Available in 5 x 7 only.

#3 Voltage	
H	5 Volt
L	3.3 Volt

H = 1 thru 133MHz
L = 1 thru 100MHz

#4 Packaging	
T	Tube
Z	Tape & Reel

Package style 1 and 4 available in tube packaging only. Package style 7 and 8 available in tube and tape & reel

#5 Operating Temp.	
0	0°C ~ 70°C
5	-20°C ~ 70°C
7	-40°C ~ 85°C

CPPFX available in -40°C ~ 85°C only.

#6 Stability	
6	±100ppm
P	±50ppm
R	±25ppm

R not available in -40°C to 80°C CPPFX available in ±25ppm only.

#7 Function	
T	Tri-State
P	Power Down

Tri-State Mode – The output of the part is weakly pulled low when the control pin goes low. The active circuitry continues to operate, allowing a rapid return to normal operation when the control pin goes high.

Power Down Mode – When the control pin goes low, all active circuitry on the chip within the oscillator is shut down. For reactivation, time in which the part regains its output is minimal.

D

How to Select a Base Number:

 # 1 = Select Output
 # 2 = Select Package Style
 # 3 = Select Voltage
 # 4 = Select Packaging
 # 5 = Select Operating Temp.
 # 6 = Select Stability
 # 7 = Select Function

***** Call Digi-Key with your selected Base Part Number, and a Sales Representative will enter your desired frequency.

Programmable parts are non-cancelable and non-returnable!

Fig.	Digi-Key * Base Part No.	Price Each 1	10	50	Tape and Reel Pricing 100	500	1,000
1	CPPC4-□T□□□-ND	5.15	4.41	3.24	—	—	—
	CPPC4-□T□RD-ND	5.91	5.07	3.72	—	—	—
	CPPLC4-□T□□□-ND	5.91	5.07	3.72	—	—	—
	CPPLT4-□T□□□□-ND	5.91	5.07	3.72	—	—	—
	CPPT4-□T□□□-ND	5.15	4.41	3.24	—	—	—
	CPPT4-□T□RD-ND	5.91	5.07	3.72	—	—	—
2	CPPC1-□T□□□-ND	5.15	4.41	3.24	—	—	—
	CPPC1-□T□RD-ND	5.91	5.07	3.72	—	—	—
	CPPLC1-□T□□□-ND	5.91	5.07	3.72	—	—	—
	CPPLT1-□T□□□□-ND	5.91	5.07	3.72	—	—	—
	CPPT1-□T□□□-ND	5.15	4.41	3.24	—	—	—
	CPPT1-□T□RD-ND	5.91	5.07	3.72	—	—	—
3	CPPC7-□□□□□-ND	4.76	4.09	3.00	272.25	1020.94	1815.00
	CPPC7-□□□RD-ND	5.49	4.71	3.45	313.63	1176.12	2090.88

Fig.	Digi-Key * Base Part No.	Price Each 1	10	50	Tape and Reel Pricing 100	500	1,000
3	CPPFXC7-□□7RD-ND	6.33	5.43	3.98	361.55	1355.81	2410.32
	CPPFXT7-□□7RD-ND	6.33	5.43	3.98	361.55	1355.81	2410.32
	CPPLC7-□□□□□-ND	5.49	4.71	3.45	313.63	1176.12	2090.88
	CPPLT7-□□□□□-ND	5.49	4.71	3.45	313.63	1176.12	2090.88
	CPPT7-□□□□□-ND	4.76	4.09	3.00	277.70	1041.36	1851.30
	CPPT7-□□□RD-ND	5.49	4.71	3.45	319.08	1196.54	2127.18
4	CPPLC5-□T□□□-ND	7.25	6.21	4.56	—	—	—
	CPPLT5-□T□□□-ND	7.25	6.21	4.56	—	—	—
5	CPPC8-□□□□□-ND	5.15	4.41	3.24	294.03	1102.61	1960.20
	CPPC8-□□□RD-ND	5.91	5.07	3.72	337.59	1265.96	2250.60
	CPPLC8-□□□□□-ND	5.91	5.07	3.72	337.59	1265.96	2250.60
	CPPLT8-□□□□□-ND	5.91	5.07	3.72	337.59	1265.96	2250.60
	CPPT8-□□□□□-ND	5.15	4.41	3.24	299.48	1123.03	1996.50
	CPPT8-□□□RD-ND	5.91	5.07	3.72	343.04	1286.38	2286.90

FIPO™ Programmable (Blank) Oscillators

FX5X7-ND	5x7 Ceramic SMD, ±25ppm	**4.22**	**X1FS15-ND**	Full Size, ±50ppm or ±100ppm	**3.43**
LX1FS-ND	Full Size, ±50ppm or ±100ppm	**3.94**	**X4HS2-ND**	Half Size, ±25ppm	**3.94**
LX4HS-ND	Half Size, ±50ppm or ±100ppm	**3.94**	**X4HS15-ND**	Half Size, ±50ppm or ±100ppm	**3.43**
LX5-ND	3.2 x 5mm SMD, ±50ppm or ±100ppm	**4.83**	**5X72-ND**	5x7 Ceramic SMD, ±25ppm	**3.66**
LX7-ND	5x7 Ceramic SMD, ±50ppm or 100ppm	**3.66**	**5X715-ND**	5x7 Ceramic SMD, ±50ppm or 100ppm	**3.18**
LX8-ND	Plastic SMD J-lead, ±50ppm or ±100ppm	**3.94**	**X8J2-ND**	Plastic SMD, ±25ppm SMD	**3.94**
X1FS2-ND	Full Size, ±25ppm	**3.94**	**X8J15-ND**	Plastic SMD, ±50ppm or ±100ppm	**3.43**

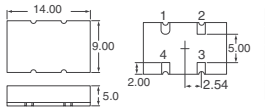
Programmers and Adapter Sockets

PG-3000-ND	PC Based Programmer for FIPO Parts	**355.01**
SC-5320-ND	Socket for 5mm x 3.2mm Oscillators (use with PG-3000, PG3100 and PG2000P)	**34.30**
SC2000-ND	Socket for 5mm x 7mm Ceramic Oscillators (use with PG-3000, PG3100 and PG2000P)	**34.40**
SC2500-ND	Socket for Style 8 Plastic Oscillators (use with PG-3000, PG3100 and PG2000P)	**63.89**

Note: For Programmer features and system requirements, please see appropriate data sheets on Digi-Key website.

High Reliability Oscillators, VCXOs, TCXOs and TCVCXOs

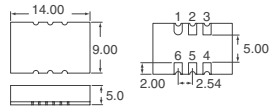
Fig. 1



A Pin Connection	
1	LVPECL-
2	Ground
3	LVPECL+
4	VDD

B Pin Connection	
1	LVDSL-
2	Ground
3	LVDS+
4	VDD

Fig. 2



A Pin Connection	
1	DISABLE
2	NO CONNECT
3	Ground
4	LVPECL+
5	LVPECL-
6	Vdd

B Pin Connection	
1	ENABLE
2	NO CONNECT
3	Ground
4	LVDS+
5	LVDS-
6	Vdd

C Pin Connection	
1	VCONTROL
2	ENABLE
3	Ground
4	LVPECL+
5	LVPECL-
6	Vdd

D Pin Connection	
1	VCONTROL
2	DISABLE
3	Ground
4	LVPECL+
5	LVPECL-
6	Vdd

E Pin Connection	
1	VCONTROL
2	ENABLE
3	Ground
4	LVDS+
5	LVDS-
6	Vdd

Fig.	Output Type	Frequency (MHz)	Digi-Key Part No.	Price Each 1	5	10	Cardinal Components Part No.
			Oscillators				
1A	LVPECL	155.520	370-1000-ND	43.56	34.85	33.11	CFE4-A7BP-155.52
		156.250	370-1001-ND	43.56	34.85	33.11	CFE4-A7BP-156.25
		212.500	370-1002-ND	43.56	34.85	33.11	CFE4-A7BP-212.5
		311.040	370-1003-ND	52.64	42.11	40.01	CFE4-A7BP-311.04
		622.080	370-1004-ND	52.64	42.11	40.01	CFE4-A7BP-622.08
1B	LVDS	155.520	370-1005-ND	43.56	34.85	33.11	CFL4-A7BP-155.52
		156.250	370-1006-ND	43.56	34.85	33.11	CFL4-A7BP-156.25
		212.500	370-1007-ND	43.56	34.85	33.11	CFL4-A7BP-212.5
		311.040	370-1008-ND	52.64	42.11	40.01	CFL4-A7BP-311.04
		622.080	370-1009-ND	52.64	42.11	40.01	CFL4-A7BP-622.08
2A	LVPECL	155.520	370-1010-ND	43.56	34.85	33.11	CFED-A7BP-155.52TS
		156.250	370-1011-ND	43.56	34.85	33.11	CFED-A7BP-156.25TS
		212.500	370-1012-ND	43.56	34.85	33.11	CFED-A7BP-212.5TS
		311.040	370-1013-ND	52.64	42.11	40.01	CFED-A7BP-311.04TS
		622.080	370-1014-ND	52.64	42.11	40.01	CFED-A7BP-622.08TS
2B	LVDS	155.520	370-1015-ND	43.56	34.85	33.11	CFL-A7BP-155.52TS
		156.250	370-1016-ND	43.56	34.85	33.11	CFL-A7BP-156.25TS
		212.500	370-1017-ND	43.56	34.85	33.11	CFL-A7BP-212.5TS
		311.040	370-1018-ND	52.64	42.11	40.01	CFL-A7BP-311.04TS
		622.080	370-1019-ND	52.64	42.11	40.01	CFL-A7BP-622.08TS
			VCXOs				
2C	LVPECL	155.520	370-1020-ND	47.19	37.76	35.87	CFVE-A7BP-155.52TS
		156.250	370-1021-ND	47.19	37.76	35.87	CFVE-A7BP-156.25TS
		212.500	370-1022-ND	47.19	37.76	35.87	CFVE-A7BP-212.5TS
		311.040	370-1023-ND	56.27	45.02	42.77	CFVE-A7BP-311.04TS
2C	LVPECL	622.080	370-1024-ND	56.27	45.02	42.77	CFVE-A7BP-622.08TS
2D	LVPECL	155.520	370-1025-ND	47.19	37.76	35.87	CFVED-A7BP-155.52TS
		156.250	370-1026-ND	47.19	37.76	35.87	CFVED-A7BP-156.25TS
		212.500	370-1027-ND	47.19	37.76	35.87	CFVED-A7BP-212.5TS
		311.040	370-1028-ND	56.27	45.02	42.77	CFVED-A7BP-311.04TS
		622.080	370-1029-ND	56.27	45.02	42.77	CFVED-A7BP-622.08TS
2E	LVDS	155.520	370-1030-ND	47.19	37.76	35.87	CFVL-A7BP-155.52TS
		156.250	370-1031-ND	47.19	37.76	35.87	CFVL-A7BP-156.25TS
		212.500	370-1032-ND	47.19	37.76	35.87	CFVL-A7BP-212.5TS
		311.040	370-1033-ND	56.27	45.02	42.77	CFVL-A7BP-311.04TS
		622.080	370-1034-ND	56.27	45.02	42.77	CFVL-A7BP-622.08TS
			TCXOs				
2A	LVPECL	155.520	370-1035-ND	52.64	42.11	40.01	CTED-A5B3-155.52TS
		311.040	370-1038-ND	61.71	49.37	46.91	CTED-A5B3-311.04TS
		622.080	370-1039-ND	61.71	49.37	46.91	CTED-A5B3-622.08TS
2B	LVDS	155.520	370-1040-ND	52.64	42.11	40.01	CTL-A5B3-155.52TS
		311.040	370-1043-ND	61.71	49.37	46.91	CTL-A5B3-311.04TS
		622.080	370-1044-ND	61.71	49.37	46.91	CTL-A5B3-622.08TS
			TCVCXOs				
2D	LVPECL	155.520	370-1045-ND	52.64	42.11	40.01	CTVED-A5B3-155.52TS
		311.040	370-1048-ND	61.71	49.37	46.91	CTVED-A5B3-311.04TS
		622.080	370-1049-ND	61.71	49.37	46.91	CTVED-A5B3-622.08TS
2E	LVDS	155.520	370-1050-ND	52.64	42.11	40.01	CTVL-A5B3-155.52TS
		311.040	370-1053-ND	61.71	49.37	46.91	CTVL-A5B3-311.04TS
		622.080	370-1054-ND	61.71	49.37	46.91	CTVL-A5B3-622.08TS

Note: For additional specifications, please see the manufacturer's data sheets.