Factory Programmable Oscillator

Series CPPM

- **Programmed at the Factory and tested at -55 to +125 C**
- *** Full custom oscillator in 24 hours**

RoHS COMPLIANT 2002 / 95 / EC

Part Numbering Example: CPPM C 7 L Z - A3 B6 - XX.XXXX TS

CPPM	C	7	L	Z	A3	B6	XX.XXXX	TS
SERIES	OUTPUT	PACKAGE STYLE	VOLTAGE	ADDED FEATURES	OPERATING TEMP.	STABILITY	FREQUENCY	TRI-STATE
CPPM	C = CMOS T = TTL	5 = 3.2X5 Ceramic 7 = 5X7 Ceramic	Blank = 5V L = 3.3 V	Blank = Bulk T = Tube Z = Tape and Reel	A3 = -55°C +125°C	B6 = ± 100 ppm	1.000~133.000 MHz	TS = Tri-State PD=PowerDwn

Specifications:

Description	Min	Typ	Max	Unit
Frequency Range: Programmable to Any Discrete Frequency	1.000		133.000	MHz
Available Stability Options:	-100		100	ppm ppm
Programmable Supply Voltage:				
(1–133 MHz)	4.5	5.0	5.5	V
(1–133 MHz)	3.0	3.3	3.6	V
Operating Temperature Range Options:	0 -55		+70 +125	°C °C
Storage Temperature:	-55		+125	°C
Aging (PPM/Year) Ta=25C, Vdd=5/3.3V			±5	
Programmable Output Level:	TTL/CMOS			
Packaging:	Tape and Reel (1K per Reel) Tube			

Operating Conditions:

	Description	Min	Max	Unit
Vdd	Supply Voltage	3.0	5.5	V
C_{TTL}	Max Capacitive Load on outputs for TTL levels			
	4.5V–5.5V Vdd ≤ 40 MHz		50	pF
	4.5V–5.5V Vdd > 40–133 MHz		25	pF
C_{CMOS}	Max Capacitive Load on outputs for CMOS levels			
	4.5V–5.5V Vdd, ≤ 66 MHz		50	pF
	4.5V–5.5V Vdd, >66–133 MHz		25	pF
	3.0V–3.6V Vdd, ≤ 40 MHz		30	pF
	3.0V–3.6V Vdd, >40–100 MHz		15	pF

Cardinal Components, Inc.
145 Route 46 West
Wayne, NJ 07470
Rev: C-090414-11

TEL: (973)785-1333
E-MAIL: sales@cardinalxtal.com
WEB: http://www.cardinalxtal.com

Output Clock Switching Characteristics

Description	Test Conditions	Min	Typ	Max	Unit
Duty Cycle:					
TTL @ 1.4 V	≤ 50 MHz, C_L = 50 pF	45		55	%
4.5-5.5 Vdd	50–66 MHz, C_L = 15 pF	45		55	%
	66–125 MHz, C_L = 25 pF	40		60	%
	125–133 MHz, C_L = 15 pF	40		60	%
Duty Cycle:	≤ 66 MHz, C_L ≤ 25 pF	45		55	%
CMOS @ Vdd/2	66–125 MHz, C_L ≤ 25 pF	40		60	%
4.5-5.5 Vdd	125–133 MHz, C_L ≤ 15 pF	40		60	%
3.0–3.6 Vdd	≤ 40 MHz, C_L ≤ 30 pF	45		55	%
	40-100 MHz, C_L ≤ 15 pF	40		60	%
Output Clock Rise/Fall					
	0.8V–2.0V, 4.5-5.5 Vdd, C_L = 50			1.8	ns
	0.8V–2.0V, 4.5-5.5 Vdd, C_L = 25			1.2	ns
	0.8V–2.0V, 4.5-5.5 Vdd, C_L = 15			0.9	ns
	0.2–0.8Vdd, 4.5-5.5 Vdd, C_L = 50			3.4	ns
	0.2–0.8Vdd, 3.0–3.6 Vdd, C_L = 30			4.0	ns
	0.2–0.8Vdd, 3.0–3.6 Vdd, C_L = 15			2.4	ns
Start Up Time	From power on			10	ms
Power Down Delay Time					
Synchronous	PWR_DWN pin LOW to output Hi-Z		T/2	T+10	ns
Asynchronous			10	15	ns
Output Disable Time					
Synchronous	OE pin LOW to output Hi-Z		T/2	T+10	ns
Asynchronous	T = Frequency oscillator period		10	15	ns
Output Enable Time				100	n
	≤ 33.000 MHz		11	13	ps
RMS Period Jitter:	> 33.000, MHz		8	11	ps
Peak to Peak	≤ 33.000 MHz		80	110	ps
	> 33.000 MHz		65	80	ps

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Series **CPPM**

Electrical Characteristics

Description	Test Conditions	Min	Typ	Max	Unit
Input Characteristics (Pin 1):					
V_{IL}, Low–Level Input Voltage	4.5–5.5V Vdd			0.8	V
TO TRI-STATE OR POWER DOWN	3.0–3.6V Vdd			0.2Vdd	V
V_{IH}, High–Level Input Voltage	4.5–5.5V Vdd	2.0			V
TO ENABLE OUTPUT OR OPEN	3.0–3.6V Vdd	0.7VddV			
I_{IL}, Input Low Current	V_{IN} = 0V			10	µA
I_{IH}, Input High Current	V_{IN} =Vdd			5	µA
Output Characteristics:					
V_{OL}, Low–Level Output Voltage	4.5V–5.5V Vdd, 16 mA I_{OL}			0.4	V
	3.0V–3.6V Vdd, 8 mA I_{OL}			0.4	V
V_{OHTTL}, High-level Output Voltage TTL	4.5V–5.5V Vdd, -16 mA I_{OL}	2.4			V
V_{OHCMOS}, High-level CMOS Voltage	4.5V–5.5V Vdd, -16 mA I_{OL}	Vdd-0.4			V
	3.0V–3.6V Vdd, -8 mA I_{OL}	Vdd-0.4			V
Power Supply Current: (unloaded)	4.5–5.5 Vdd, Output Freq ≤ 133 MHz			45	mA
	3.0–3.6 Vdd, Output Freq ≤ 100 MHz			25	mA
Standby Current:			10	50	µA
Tri State pull up	4.5–5.5 Vdd, V_{IN} = 0V	1.1	3.0	8.0	MΩ
(**Pin1**)	4.5–5.5 Vdd, V_{IN} = 0.7V	50	100	200	KΩ
Tri-State Leakage Current	5.0 Vdd		20		µA
Output Enable Mode:	Output is Tri-Stated				
Power Down Mode:	Output is Tri-Stated.				

"Tristate internal pull up. Output active when high"

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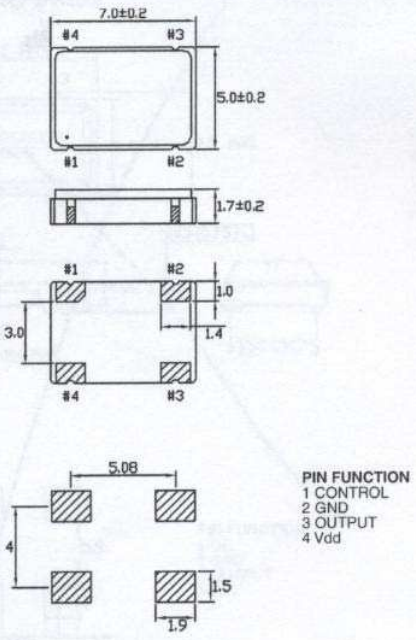
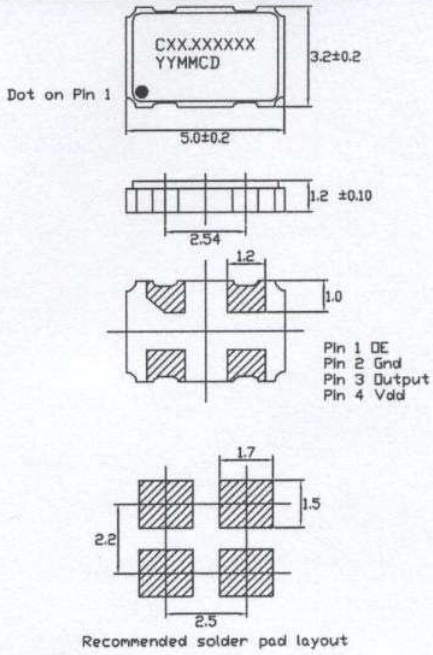
Note: Bypass** Vdd **to GND with a 0.01 µF capacitor

Style 7 5x7 Ceramic SMD



PIN FUNCTION
1 CONTROL
2 GND
3 OUTPUT
4 Vdd

Style 5 3.2x5 Ceramic SMD



Recommended solder pad layout

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