

# Dual Field Programmable Blank Oscillator

Series **CPPD**

- Programmed on the fly with the PG-3000 field oscillator programming instrument within seconds
- Full Programming available for each frequency
- Provides a sealed finished custom oscillator
- Standard Package Options
- The dual FIPO contains a frequency select function. For example, consumer products often require different electrical standards around the world. Ex: Converting PAL to NTSC by changing FS line or modem real-time switching between transmit and receive frequencies



## Part Numbering Example: CPPD C 1 L Z - A5 B6 - XX.XXXX / YY.YYYY

SERIES	OUTPUT	PACKAGE STYLE	VOLTAGE	ADDED FEATURES	OPERATING TEMP.	STABILITY	FREQ. F0	FREQ. F1
CPPD	C = CMOS T = TTL	1 = Full Size 4 = Half Size 5 = 3.2X5 Ceramic 7 = 5X7 Ceramic 8 = PLASTIC SMD	Blank = 5V L = 3.3 V R = 2.7 V	Blank = Bulk T = Tube Z = Tape and Reel	Blank = 0°C +70°C A5 = -20°C +70°C A7 = -40°C +85°C	B6 = ±100 ppm BP = ±50 ppm BR = ±25 ppm	1.000~133.000 MHz PIN 1 Logic "0"	1.000~133.000 MHz PIN 1 Logic "1"

### Specifications:

Description	Min	Typ	Max	Unit
<b>Frequency Range:</b> Programmable to Any Discrete Frequency	1.000		133.000	MHz
<b>Available Stability Options:</b>	-100 -50 -25		100 50 25	ppm ppm ppm
<b>Programmable Input Voltage:</b> (1-133 MHz) (1-100 MHz) (1-66 MHz)	4.5 3.0 2.5	5.0 3.3 2.7	5.5 3.6 3.0	V V V
<b>Operating Temperature Range Options:</b>	0 -20 -40		+70 +70 +85	°C °C °C
<b>Storage Temperature:</b>	-55		+125	°C
Aging (PPM/1st Year) Ta=25C, Vdd=5/3.3V PPM/Year (after 1st year)			±5 ±1	

**Programmable Output Level:** TTL/CMOS

**Packaging:** Tape and Reel (1K per Reel)  
Tube  
Bulk

### Operating Conditions:

Description	Min	Max	Unit
Vdd Supply Voltage	3.0	5.5	V
CTTL Max Capacitive Load on outputs for TTL levels 4.5V-5.5V Vdd ≤ 40 MHz 4.5V-5.5V Vdd > 40-133 MHz		50	pF
		25	pF
CCMOS Max Capacitive Load on outputs for CMOS levels 4.5V-5.5V Vdd, ≤ 66 MHz 4.5V-5.5V Vdd, 66-133 MHz 3.0V-3.6V Vdd, ≤ 40 MHz 3.0V-3.6V Vdd, 40-100 MHz 2.5V-3.0V Vdd, ≤ 66 MHz		50	pF
		25	pF
		30	pF
		15	pF
		25	pF



## Dual Field Programmable Blank Oscillator

Series CPPD

- Programmed on the fly with the PG-3000 field oscillator programming instrument within seconds
- Full Programming available for each frequency
- Provides a sealed finished custom oscillator

## Electrical Characteristics

Description	TEST CONDITIONS	Min	Typ	Max	Unit
<b>Input Characteristics (Pin 1):</b>					
CONTROL PIN		4.5–5.5V Vdd			0.8 V
V <sub>IL</sub> , Low-Level Input Voltage		3.0–3.6V Vdd			0.2V <sub>dd</sub> V
TO SWITCH TO F0 OUTPUT		2.5-3.0V Vdd			0.2V <sub>dd</sub> V
V <sub>IH</sub> , High-Level Input Voltage		4.5–5.5V Vdd	2.0		V
TO SWITCH TO F1 OUTPUT		3.0–3.6V Vdd	0.7V <sub>dd</sub>		V
		2.5-3.0V Vdd	0.7V <sub>dd</sub>		V
I <sub>IL</sub> , Input Low Current	V <sub>IN</sub> = 0V				10 μA
I <sub>IH</sub> , Input High Current	V <sub>IN</sub> = V <sub>dd</sub>				5 μA
<b>Output Characteristics:</b>					
V <sub>OL</sub> , Low-Level Output Voltage	4.5V–5.5V Vdd, 16 mA I <sub>OL</sub>				0.40 V
	3.0V–3.6V Vdd, 8 mA I <sub>OL</sub>				0.4 V
V <sub>OHTTL</sub> , High-level Output Voltage TTL	4.5V–5.5V Vdd, -16 mA I <sub>OL</sub>		2.4		V
V <sub>OHCOS</sub> , High-level CMOS Voltage	4.5V–5.5V Vdd, -16 mA I <sub>OL</sub>		V <sub>dd</sub> -0.4		V
	3.0V–3.6V Vdd, -8 mA I <sub>OL</sub>		V <sub>dd</sub> -0.4		V
	2.5-3.0V V <sub>DD</sub> , 6mA		V <sub>dd</sub> -0.4		V
<b>Power Supply Current: (unloaded)</b>					
	4.5–5.5 Vdd, OUTPUT FREQ ≤ 133 MHz				45 mA
	3.0–3.6 Vdd, OUTPUT FREQ ≤ 100 MHz				25 mA
	2.5-3.0 Vdd, Output Freq ≤ 66 MHz				20 mA
<b>Input Pull-Up Resistor (Pin 1)</b>					
	4.5–5.5 Vdd, V <sub>IN</sub> = 0V		1.1	3.0	8.0 MΩ
	4.5–5.5 Vdd, V <sub>IN</sub> = 0.7V		50	100	200 KΩ
<b>Frequency Select Switching Time</b>					
					500 μs



## Dual Field Programmable Blank Oscillator

Series **CPPD**

- Programmed on the fly with the PG-3000 field oscillator programming instrument within seconds
- Full Programming available for each frequency
- Provides a sealed finished custom oscillator

### Output Clock Switching Characteristics

Description	TEST CONDITIONS	Min	Typ	Max	Unit
<b>Duty Cycle:</b> TTL @ 1.4 V 4.5-5.5 Vdd	≤ 50 MHz, C <sub>L</sub> = 50 pF	45		55	%
	50-66 MHz, C <sub>L</sub> = 15 pF	45		55	%
	66-125 MHz, C <sub>L</sub> = 25 pF	40		60	%
	125-133 MHz, C <sub>L</sub> = 15 pF	40		60	%
<b>Duty Cycle:</b> CMOS @ Vdd/2 4.5-5.5 Vdd 3.0-3.6 Vdd	≤ 66 MHz, C <sub>L</sub> ≤ 25 pF	45		55	%
	66-125 MHz, C <sub>L</sub> ≤ 25 pF	40		60	%
	125-133 MHz, C <sub>L</sub> ≤ 15 pF	40		60	%
	≤ 40 MHz, C <sub>L</sub> ≤ 30 pF	45		55	%
	40-100 MHz, C <sub>L</sub> ≤ 15 pF	40		60	%
<b>Output Clock Rise/Fall</b>	0.8V-2.0V, 4.5-5.5 Vdd, C <sub>L</sub> = 50			1.8	ns
	0.8V-2.0V, 4.5-5.5 Vdd, C <sub>L</sub> = 25			1.2	ns
	0.8V-2.0V, 4.5-5.5 Vdd, C <sub>L</sub> = 15			0.9	ns
	0.2-0.8Vdd, 4.5-5.5 Vdd, C <sub>L</sub> = 50			3.4	ns
	0.2-0.8Vdd, 3.0-3.6 Vdd, C <sub>L</sub> = 30			4.0	ns
	0.2-0.8Vdd, 3.0-3.6 Vdd, C <sub>L</sub> = 15			2.4	ns
<b>Start Up Time</b>	From power on			10	ms
<b>RMS Period Jitter:</b> Peak to Peak *	1 - 133 MHz		8	11	ps
	≤ 33.000 MHz		65	99	ps
	> 33.000 MHz		65	80	ps

\* Jitter tested at > 1,000,000 samples, exceeding JEDEC std JESD65.

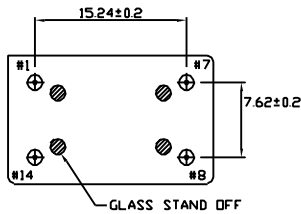
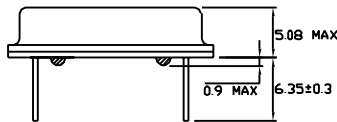
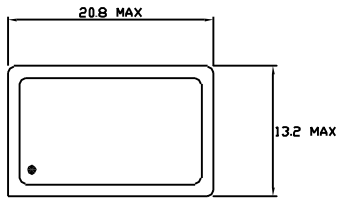


# Field Programmable Blank Oscillator

Note: Bypass Vdd to GND with a 0.01 μF capacitor

## Style 1 Full Size 14 Pin Dip

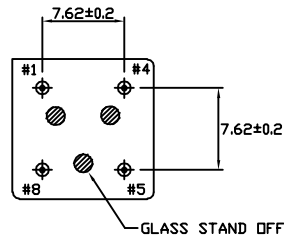
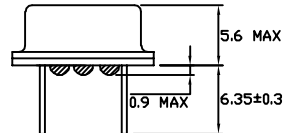
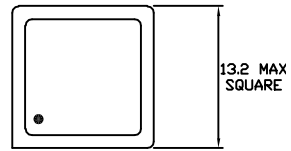
STYLE 1 FULL SIZE 14 PIN DIP



**PIN FUNCTION**  
 1 CONTROL  
 7 GND  
 8 OUTPUT  
 14 Vdd

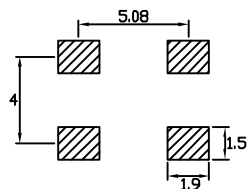
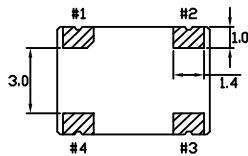
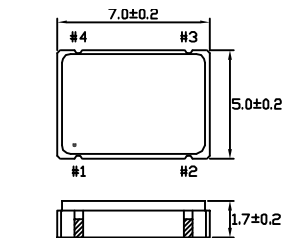
## Style 4 Half Size 8 Pin Dip

STYLE 4 HALFSIZE 8 PIN DIP



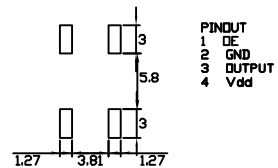
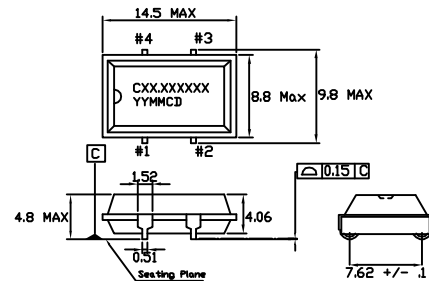
**PIN FUNCTION**  
 1 CONTROL  
 4 GND  
 5 OUTPUT  
 8 Vdd

## Style 7 5x7 Ceramic SMD



**PIN FUNCTION**  
 1 CONTROL  
 2 GND  
 3 OUTPUT  
 4 Vdd

## Style 8 Plastic SMD



**PINOUT**  
 1 OE  
 2 GND  
 3 OUTPUT  
 4 Vdd



# Field Programmable Blank Oscillator

*Note: Bypass Vdd to GND with a 0.01  $\mu$ F capacitor*

## Style 5 3.2x5 Ceramic SMD

