



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Field Programmable Crystal Oscillator

Series CPPL

- Programmed in the field with the PG-3200 oscillator programming instrument within seconds.
- Factory Programmable
- Can be programmed twice
- Standard Package Options
- Ultra low jitter @ 1 million samples

Instrument Part Number:

CPPLCL1LZ-A5B6-XX.XXXX TS

CPPL SERIES	C OUTPUT	1 PACKAGE STYLE	L VOLTAGE	Z ADDED FEATURE	A5 OPERATING TEMP	B6 STABILITY	XX.XXXX FREQUENCY	TS TRI-STATE
CPPL	C = CMOS T = TTL	1 = Full Size 4 = Half Size 5 = 3.2x5 Ceramic 7 = 5x7 Ceramic 8 = PLASTIC SMD	Blank = 5V L = 3.3V R = 2.7V	Blank = Cut Tape B = Bulk T = Tube Z = Tape and Reel	Blank = 0°C~+70°C A3 = -55~+125°C A5 = -20°C~+70°C A7 = -40°C~+85°C	B6 = ±100PPM BP = ±50PPM BR = ±25PPM	0.500 ~ 133.000MHz	TS = Tri-State PD = Power Down

Specifications:

Description	Min	Typ	Max	Unit
Frequency Range: Programmable to any discrete frequency	0.500		133	MHz
Available Stability Options:	-100 -50 -25		+100 +50 +25	PPM
Programmable Supply Voltage:				
(1-133 MHz)	4.5	5.0	5.5	V
(1-100 MHz)	3.0	3.3	3.6	V
(1-66.0 MHz)	2.5	2.7	3.0	V
Operating Temperature Range Options:				
	-55		+125	°C
	-20		+70	°C
	-40		+85	°C
Storage Temperature:	-55		+125	°C
Aging: Ta=°25C,Vdd=5V/3.3V			±5	PPM/Year

Programmable Output Level:

CMOS/TTL

Operating Conditions:

Description	Min	Max	Unit
V_{DD} Supply Voltage	2.7	5.5	V
C_{TTL} Max capacitive load on outputs for TTL levels			
4.5V-5.5V V _{DD} , ≤ 40 MHz		50	pF
4.5V-5.5V V _{DD} , 40 - 133 MHz		25	pF
C_{CMOS} Max capacitive load on outputs for CMOS levels			
4.5V-5.5V V _{DD} , ≤ 66 MHz		50	pF
4.5V-5.5V V _{DD} , 66 - 133 MHz		25	pF
3.0V-3.6V V _{DD} , ≤ 40 MHz		30	pF
3.0V-3.6V V _{DD} , 40 - 100 MHz		15	pF
2.5-3.0V V _{DD} , ≤ 66 MHz		25	pF



Output Clock Switching Characteristics:

Description	Test Conditions	Min	Typ	Max	Unit
Duty Cycle: TTL @ 1.4V 4.5-5.5 V _{DD}	≤ 50 MHz, C _L = 50 pF	45	-	55	%
	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: CMOS @ V _{DD} /2 4.5-5.5 V _{DD} 3.0-3.6 V _{DD}	≤ 66 MHz, C _L ≤ 25 pF	45	-	55	%
	66 - 125 MHz, C _L ≤ 25 pF	40	-	60	%
	125 - 133 MHz, C _L ≤ 15 pF	60	-	60	%
	≤ 40 MHz, C _L ≤ 30 pF	45	-	55	%
Rise/Fall:	0.8V - 2.0V, 4.5 - 5.5 V _{DD} , C _L = 50 pF			1.8	ns
	0.8V - 2.0V, 4.5 - 5.5 V _{DD} , C _L = 25 pF			1.2	ns
	0.8V - 2.0V, 4.5 - 5.5 V _{DD} , C _L = 15 pF			0.9	ns
	0.2V - 0.8 * V _{DD} , 4.5 - 5.5 V _{DD} , C _L = 50 pF			3.4	ns
	0.2V - 0.8 * V _{DD} , 3.0 - 3.6 V _{DD} , C _L = 30 pF			4.0	ns
	0.2V - 0.8 * V _{DD} , 3.0 - 3.6 V _{DD} , C _L = 15 pF			2.4	ns
Start Up Time	From Power On	-	-	2	ms
Power Down Delay Time Synchronous Asynchronous	PWR_DOWN pin LOW to output Hi-Z, T = Frequency Oscillator Period		T/2	T+10	ns
			10	15	ns
Output Disable Time Synchronous Asynchronous	OE pin LOW to output Hi-Z, T = Frequency Oscillator Period		T/2	T+10	ns
			10	15	ns
Output Enable Time	T = Frequency Oscillator Period		T	1.5 * T + 25	ns
RMS Period Jitter	1 - 133.00 MHz		8	11	ps
Peak to Peak*	≤ 33.000 MHz		65	99	ps
	> 33.000 MHz		65	80	ps

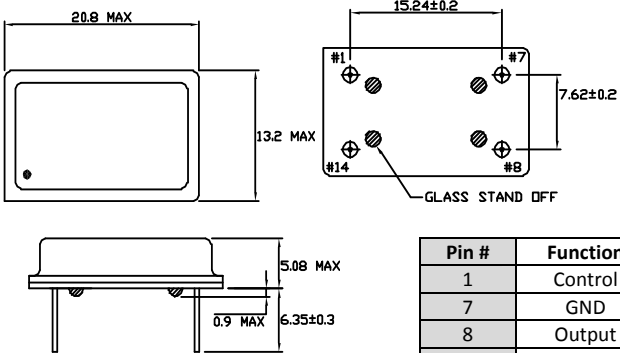
* Jitter Tested at > 1,000,000 samples, exceeding JEDEC std JESD65

Electrical Characteristics:

Description	Test Conditions	Min	Typ	Max	Unit
Input Characteristics (Pin 1):					
V _{IL} , Low-Level Input Voltage (To Tri-State or Power Down)	V _{DD} = 5.0 V	-	-	0.8	V
	V _{DD} = 3.3 V	-	-	0.2 * V _{DD}	V
	V _{DD} = 2.7 V	-	-	0.2 * V _{DD}	V
V _{IH} , High-Level Input Voltage (To Enable Output or Open)	V _{DD} = 5.0 V	2.0	-	-	V
	V _{DD} = 3.3 V	0.7 * V _{DD}	-	-	V
I _{IL} , Input Low Current	V _{IN} = 0 V	-	-	10	μA
I _{IH} , Input High Current	V _{IN} = V _{DD}	-	-	5	μA
Output Characteristics:					
V _{OL} , Low-Level Output Voltage	V _{DD} = 5.0 V, I _{OL} = 16mA	-	-	0.4	V
	V _{DD} = 3.3 V, I _{OL} = 8mA	-	-	0.4	V
V _{IHTTL} , High-Level Output Voltage	V _{DD} = 5.0 V, I _{OL} = -16mA	2.4	-	-	V
V _{IHCMOS} , High-Level Output Voltage	V _{DD} = 5.0 V, I _{OL} = -16mA	V _{DD} -0.4	-	-	V
	V _{DD} = 3.3 V, I _{OL} = -8mA	V _{DD} -0.4	-	-	V
Power Supply Current: (Unloaded)	V _{DD} = 5.0 V, F _O ≤ 133 MHz	-	-	45	mA
	V _{DD} = 3.3 V, F _O ≤ 100 MHz	-	-	25	mA
	V _{DD} = 2.7 V, F _O ≤ 66.0 MHz	-	-	20	mA
Standby Current:		-	10	50	μA
Tri-State Leakage Current	V _{DD} = 5.0 V	-	20	-	μA
Output Enable Mode:	Output is Tri-Stated				
Power Down Mode:	Output is Tri-Stated				

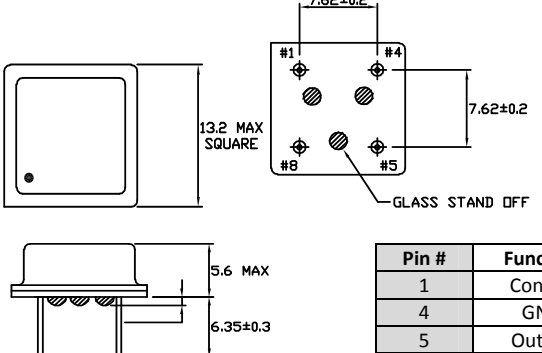
*Note: Bypass V_{DD} to GND with a $0.01\mu\text{F}$ capacitor

Style 1 Full Size 14 Pin Dip



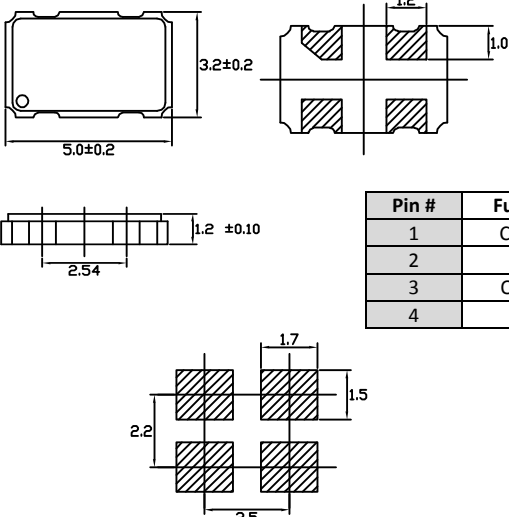
Pin #	Function
1	Control
7	GND
8	Output
14	V_{DD}

Style 4 Half Size 8 Pin Dip



Pin #	Function
1	Control
4	GND
5	Output
8	V_{DD}

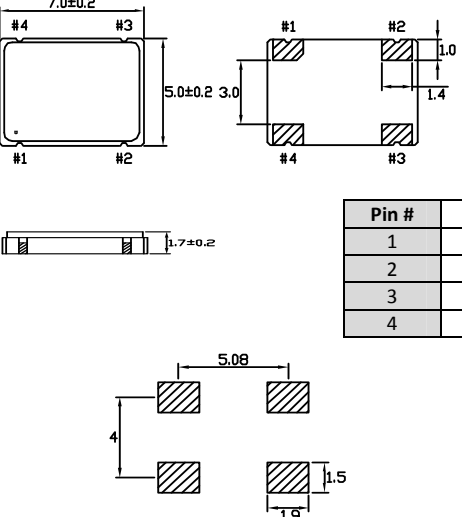
Style 5 3.2x5 Ceramic SMD



Pin #	Function
1	Control
2	GND
3	Output
4	V_{DD}

Recommended Solder Pad Layout

Style 7 5x7 Ceramic SMD



Pin #	Function
1	Control
2	GND
3	Output
4	V_{DD}

Recommended Solder Pad Layout



*Note: Bypass V_{DD} to GND with a 0.01 μ F capacitor

