

Programmable Crystal Oscillator



- Factory Programmable
- Standard Package Options
- Also available in 1.8V

Part Numbering Example CPWC7PLZ-A7B6-125.0TS

CPW	C	7P	L	Z	A7	B6	XX.XXXX	TS
SERIES	OUTPUT	PACKAGE STYLE	VOLTAGE	ADDED FEATURES	OPERATING TEMP.	STABILITY	FREQUENCY	TRI-STATE
CPW	C = CMOS	5P = 3.2 X 5 Plastic 7P = 5 x 7 Plastic	L = 3.3V R = 2.5V Q = 1.8V	Blank = Bulk T = Tube Z = Tape and Reel	A7 = -40°C + 85°C	B6 = ±100ppm BP = ±50ppm	1.000 - 166.000MHz	TS = Tri-State PD = Power Down

Specification

Description	Min	Type	Max	Unit
Frequency Range: Programmable to Any Discrete Frequency	1.0		166.0	MHz
Available Stability Options:	-100 -50 -25		100 50 25	ppm ppm ppm
Programmable Supply Voltage: (1 - 133 MHz) (1 - 100 MHz)	3.0 2.2 1.6	3.3 2.5 1.8	3.6 2.8 2.0	V V V
Operating Temperature Range:	-40		+85	°C
Storage Temperature:	-55		+125	°C
Aging (PPM/Year): Ta = 25°C, V _{DD} = 3.3V			±5	

Operating Conditions

Description	Min	Max	Unit
V_{DD} Supply Voltage	1.6	3.6	V
V_{DD} Rise Time	100		µS
C_{CMOS} Max Capacitive Load on Outputs for CMOS Levels		15	pF

Electrical Characteristics

Description	Test Conditions	Min	Type	Max	Unit
Input Characteristics (Pin 1): V_{IL} , Low-Level Input Voltage <i>to disable output</i>				$0.2V_{DD}$	V
V_{IH} , High-Level Input Voltage <i>to enable output open</i>		$0.8V_{DD}$			V
I_{IL} , Input Low Current I_{IH} , Input High Current	$V_{IN} = 0V$ $V_{IN} = V_{DD}$			10 10	μA μA
Output Characteristics: V_{OL} , Low-Level Output Voltage	$1.8V - 2.5V V_{DD}$, $4mA I_{OL}$ $3.0V - 3.6V V_{DD}$, $8mA I_{OL}$			$0.1V_{DD}$ 0.4	V
V_{OHCMS} , High Level CMOS Voltage	$1.8V - 2.5V V_{DD}$, $4mA I_{OL}$ $3.0V - 3.6V V_{DD}$, $-8mA I_{OL}$	0.9 $V_{DD} - 0.4$			V
Power Supply Current: (unloaded)	$1MHz \leq f_0 \leq 25MHz$	3.5		4.0	mA
	$25MHz < f_0 \leq 50MHz$	5.0		6.5	mA
	$50MHz < f_0 \leq 75MHz$	6.0		8.5	mA
	$75MHz < f_0 \leq 100MHz$	7.0		10.5	mA
	$100MHz < f_0 \leq 125MHz$ $125MHz < f_0 \leq 166MHz$	8.5 10.0		12.5 15.0	mA mA
Standby Current:			10	50	μA
Pull- Up (Pin 1):	$3.0 - 3.6 V_{DD}$, $V_{IN} = 0V$	1.1	3.0	8.0	$M\Omega$
	$3.0 - 3.6 V_{DD}$, $V_{IN} = 0.7V$	50	100	200	$k\Omega$
Tri-State Leakage Current:	$3.3 V_{DD}$			50	μA
Output Enable Mode:	Output is Tri-Stated				
Power Down Mode:	Output is Tri-Stated				

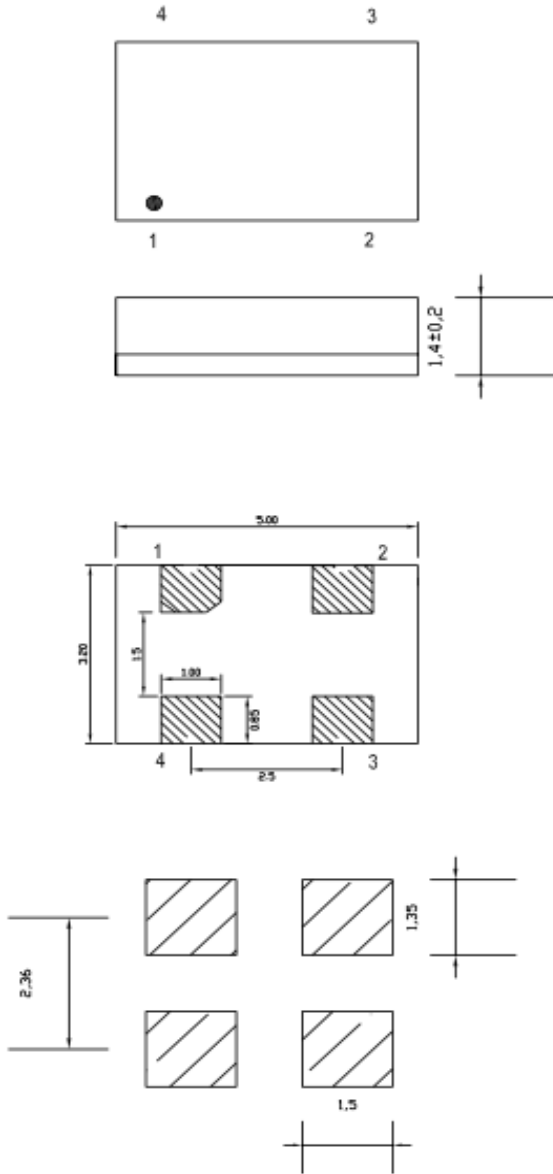
Output Clock Switching Characteristics

Description	Test Conditions	Min	Type	Max	Unit
Duty Cycle:		45		55	%
Output Clock Rise/Fall:	15pF			1.5	ns
Start Up Time:	from Power On		5	10	ms
Power Down Delay Time:	PWR_DWN pin LOW to output Hi-Z			1.5T +	ns
Synchronous				100	ns
Asynchronous				100	ns
Output Disable Time:	OE pin LOW to Output Hi-Z			1.5T +	ns
Synchronous	T = Frequency oscillator period			100	ns
Asynchronous				100	ns
Output Enable Time:	OE pin LOW to Output Hi-Z			1.5T +	ns
Synchronous	T = Frequency oscillator period			100	ns
Asynchronous				100	ns
RMS Period Jitter:	< 33.000MHz		6		ps
	> 33.000MHz		7		ps
Peak to Peak *	< 33.000MHz		80		ps
	> 33.000MHz		60		ps

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

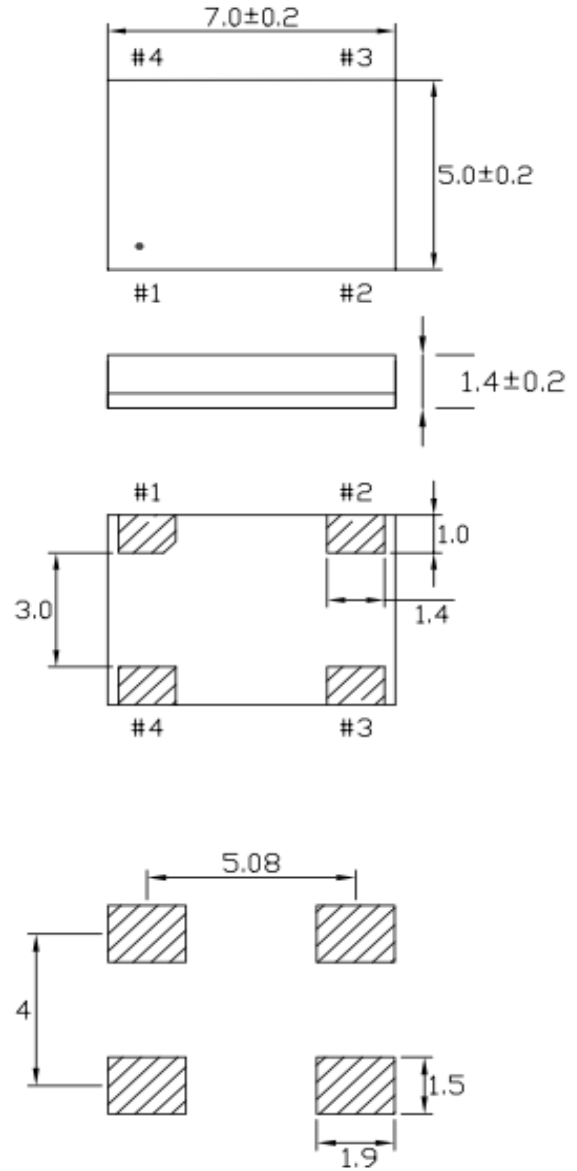
Hermetically Sealed Ceramic Per Crystal
 Low Cost Plastic High Temperature FR4 Molded

Style 5: (3.2 x 5) Plastic SMD



Pin 1 CONTROL
 Pin 2 GND
 Pin 3 OUTPUT
 Pin 4 V_{DD}

Style 7: (5 x 7) Plastic SMD



Pin 1 CONTROL
 Pin 2 GND
 Pin 3 OUTPUT
 Pin 4 V_{DD}