

## Factory Prog. 4 Output CMOS TCXO

- Full Custom Multi-Frequency Programmable Osc
- Reduced EMI by turning off unused output
- Factory Programmable
- Industry-standard packaging saves on board space
- Mult. outputs 1 pkg vs. mult. osc & assoc. comp.
- Performs well under all conditions
- Increased Integration

## Applications

- High-end multimedia
- Communications
- Industrial
- A/D converters
- Consumer Applications
- Low tolerance applications
- Low-power applications

Series **CCT4C**

Part Numbering Example: **CCT4C 1A 200.0 / 150.0 / 125.0 / 100.0**

<b>CCT4C</b>	<b>1A</b>	<b>200</b>	<b>150</b>	<b>125</b>	<b>100</b>
<b>SERIES</b>	<b>PACKAGE STYLE</b>	<b>FREQUENCY A</b>	<b>FREQUENCY B</b>	<b>FREQUENCY C</b>	<b>FREQUENCY D</b>
	1A=14 pin dip 9=9.6x11.4 SMD	0.2 - 200 MHz	0.2 - 200 MHz	0.2 - 200 MHz	0.2 - 200 MHz

Specifications:	Min	Typ	Max	Unit
<b>Frequency Range:</b>				
Output A CMOS	0.2		200	MHz
Output B CMOS	0.2		200	MHz
Output C CMOS	0.2		200	MHz
Output D CMOS	0.2		200	MHz
<b>Available Stability Options:</b>	-2.5		2.5	ppm
<b>Supply Voltage:</b>	3.135	3.3	3.465	V
<b>Operating Temperature Range Options:</b>	-40		85	°C
<b>Storage Temperature:</b>	-55		125	°C
<b>Duty Cycle:</b>	40 45		60 55	% %
<b>Start-Up Time:</b>		3	10	mS
<b>Aging (PPM/1st Year):</b> <small>Ta=25°C, Vdd=3.3V</small>			±1	ppm
<b>Static Discharge Voltage</b> <small>Mil-Std 883, method 3015</small>	2000			V
<b>Output Load:</b> <small>CMOS, &lt; 40 MHz</small> <small>CMOS, ≥ 40 MHz</small>			30 15	pF pF
<b>Output Level:</b>	CMOS			
<b>Packaging:</b>	25 / Tube Tape & Reel			14 pin SMD

Notes: Recommended .01 µF bypass capacitor from Vcc to GND. Capacitor should be as close to oscillator as possible.



**Electrical Characteristics**

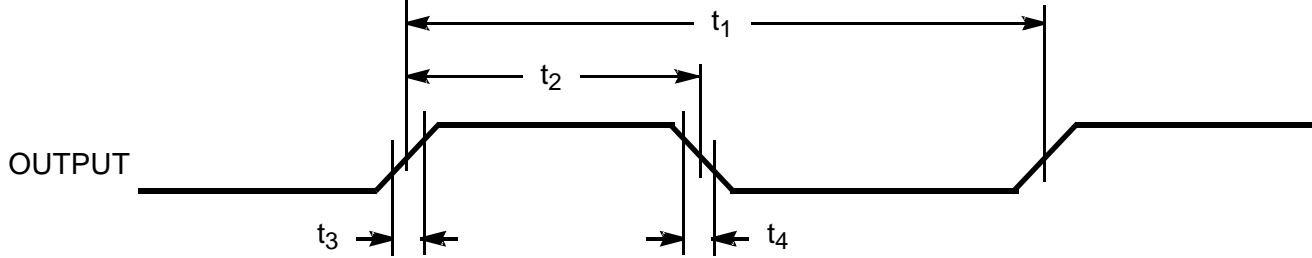
DESCRIPTION		CONDITIONS	MIN	TYP	MAX	UNIT
Ioh	Output High Current	Voh = (L)Vdd - 0.5, (L)Vdd = 3.3 V	12	24		mA
Iol	Output Low Current	Vol = .5, (L)Vdd = 3.3 V	12	24		mA
Vih	High Level Input Voltage	CMOS levels, % of Vdd	0.7			V
Vil	Low-Level Input Voltage	CMOS levels, % of Vdd			0.3	V
Iih	Input High Current	Vin = AVdd - 0.3 V		<1	10	μA
Iil	Input Low Current	Vin = + 0.3 V		<1	10	μA
Ioz	Output Leakage Current	tri-state outputs			10	μA
Idd	Total Power Supply Current	Example 1: 1 output@19.44 MHz; 1 output@38.88 MHz 1 output@77.76 Mhz; 1 output@155.52 MHz Example 2: 1 output@50 MHz; 1 output@106.25 MHz 1 output@200 Mhz; 1 output@155.52 MHz		26		mA
				38		mA
Idds	Shutdown Power Supply Curr	Shutdown active		5	20	μA

**Output Clock Switching Characteristics**

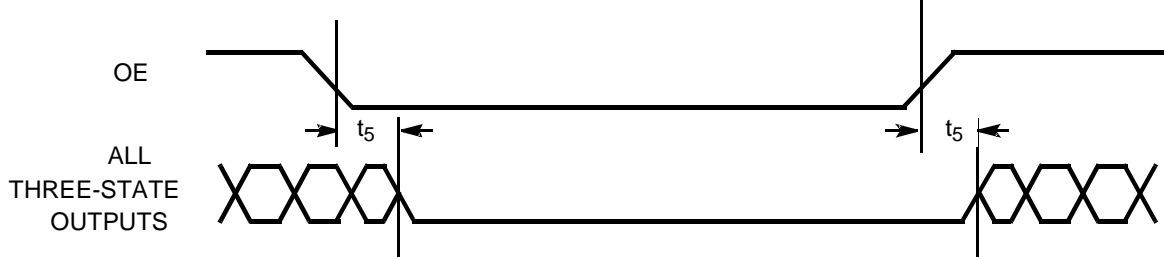
DESCRIPTION		CONDITIONS	MIN	TYP	MAX	UNIT
1/t1	Output Frequency	Clock output limit, CMOS, Commercial			200	MHz
t3	Rising Edge Slew Rate	Output clock rise time, 20% – 80% Vdd	0.75	1.4		nS
t4	Falling Edge Slew Rate	Output clock fall time, 20% – 80% Vdd	0.75	1.4		nS
t5	Output tri-state timing after SD/OE switches	Time for output to enter/leave tri-state mode		150	300	nS
t6	Clock Jitter measured at Vdd/2	Peak-to-Peak period jitter, CLK outputs		200		pS



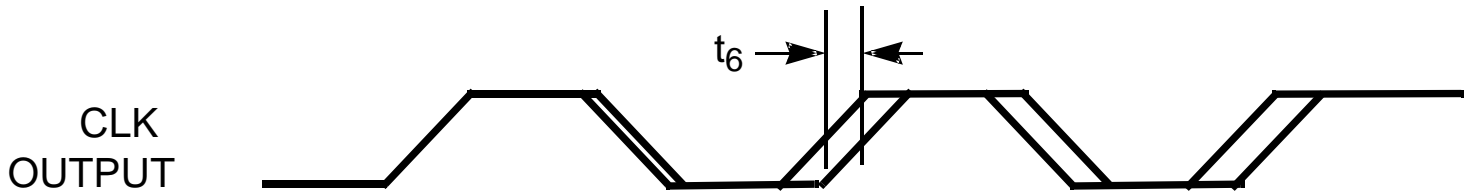
ALL OUTPUTS, DUTY CYCLE, RISE/FALL TIME



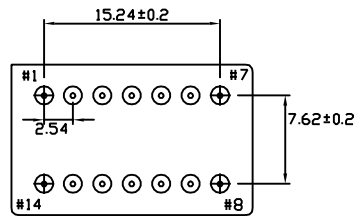
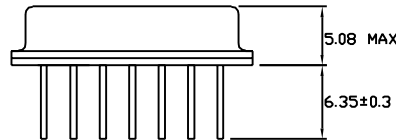
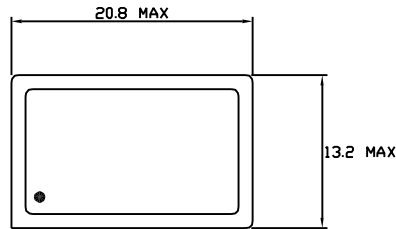
OUTPUT 3-STATE TIMING



CLK OUTPUT JITTER



DIP

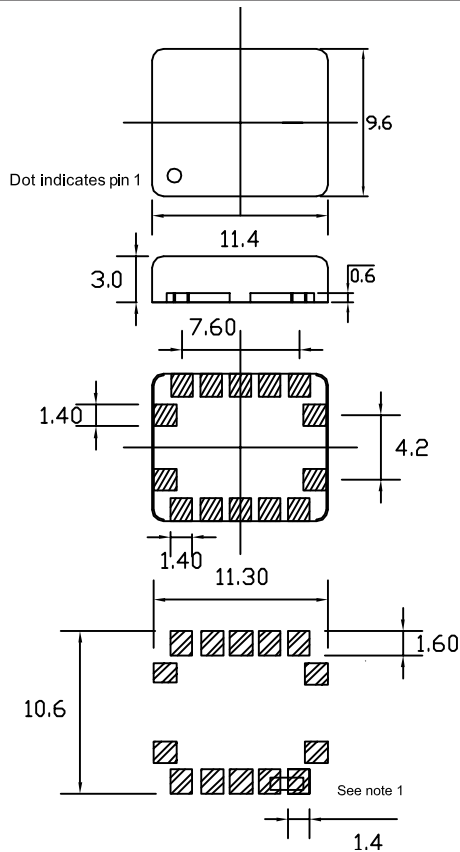


Dimensions are in mm

**PIN FUNCTION**

- PIN 1 OE (CONNECT TO VDD)
- PIN 2 SUSPEND (CONNECT TO GND)
- PIN 3 VDD
- PIN 4 CLK C OUTPUT
- PIN 5 CONNECT TO PIN 6
- PIN 6 CONNECT TO PIN 5
- PIN 7 GND
- PIN 8 FACTORY USE (MAKE NO CONNECTION)
- PIN 9 CLK D OUTPUT
- PIN10 FACTORY USE (MAKE NO CONNECTION)
- PIN 11 FACTORY USE (MAKE NO CONNECTION)
- PIN 12 FACTORY USE (MAKE NO CONNECTION)
- PIN 13 CLK A OUTPUT
- PIN 14 CLK B OUTPUT

SMD



**PIN FUNCTION**

- PIN 1 FACTORY USE (MAKE NO CONNECTION)
- PIN 2 OE
- PIN 3 VDD
- PIN 4 CLK C OUTPUT
- PIN 5 CONNECT TO PIN 6
- PIN 6 CONNECT TO PIN 5
- PIN 7 GND
- PIN 8 FACTORY USE (MAKE NO CONNECTION)
- PIN 9 CLK D OUTPUT
- PIN10 FACTORY USE (MAKE NO CONNECTION)
- PIN 11 FACTORY USE (MAKE NO CONNECTION)
- PIN 12 FACTORY USE (MAKE NO CONNECTION)
- PIN 13 CLK A OUTPUT
- PIN 14 CLK B OUTPUT

Dimensions in mm  
Recommended solder pad layout

Note1:  
For proper operation pin 5 must be connected to pin 6

