

Factory Prog. 5 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**CCT5C****Part Numbering Example: CCT5C 1A 200.0 / 150.0 / 125.0 / 100.0 / 75.0**

CCT5C	1A	200	150	125	100	75
SERIES	PACKAGE STYLE	FREQUENCY A	FREQUENCY B	FREQUENCY C	FREQUENCY D	FREQUENCY E
	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	25 - 200 MHz

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

Cardinal Components, Inc.155 Route 46 West
Wayne, NJ 07470

Rev: M-090414-14

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

Factory Prog. 5 Output CMOS TCXO

Series **CCT5C****Electrical Characteristics**

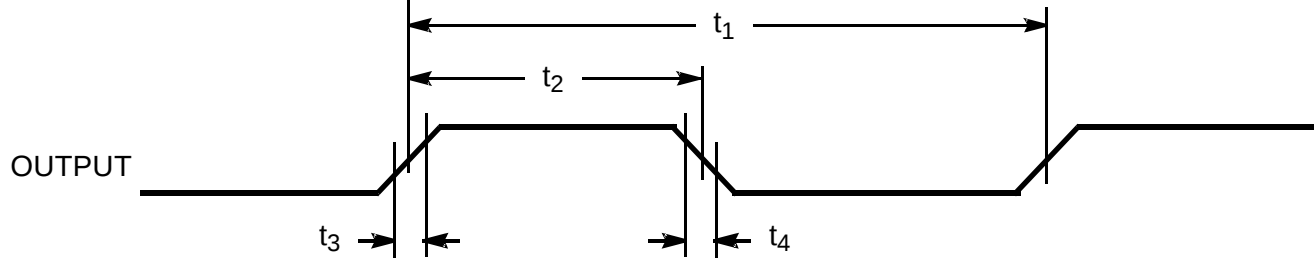
DESCRIPTION			MIN	TYP	MAX	UNIT
I _{oh}	Output High Current	V _{oh} = (L)V _{dd} - 0.5, (L)V _{dd} = 3.3 V	12	24		mA
I _{ol}	Output Low Current	V _{ol} = .5, (L)V _{dd} = 3.3 V	12	24		mA
V _{ih}	High Level Input Voltage	CMOS levels, % of V _{dd}	0.7			V
V _{il}	Low-Level Input Voltage	CMOS levels, % of V _{dd}			0.3	V
I _{ih}	Input High Current	V _{in} = AV _{dd} - 0.3 V		<1	10	μA
I _{il}	Input Low Current	V _{in} = + 0.3 V		<1	10	μA
I _{oz}	Output Leakage Current	tri-state outputs			10	μA
I _{dd}	Total Power Supply Current	Example 1: 1 output@200 MHz; 1 output@66.666 MHz 1 output@100 MHz; 1 output@50 MHz 1 output@25 MHz		35		mA
		Example 2: 1 output@200 Mhz; 1 output@155.52 MHz 1 output@100 Mhz; 1 output@77.76 MHz 1 output@50 Mhz		39		mA
I _{dds}	Shutdown Power Supply Curr	Shutdown active		5	20	μA

Output Clock Switching Characteristics

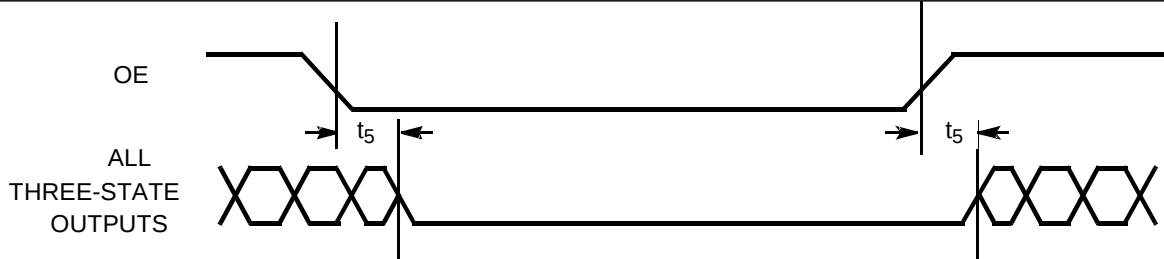
DESCRIPTION			MIN	TYP	MAX	UNIT
1/t ₁	Output Frequency	Clock output limit, CMOS, Commercial			200	MHz
t ₃	Rising Edge Slew Rate	Output clock rise time, 20% – 80% V _{dd}	0.75	1.4		nS
t ₄	Falling Edge Slew Rate	Output clock fall time, 20% – 80% V _{dd}	0.75	1.4		nS
t ₅	Output tri-state timing after SD/OE switches	Time for output to enter/leave tri-state mode		150	300	nS
t ₆	Clock Jitter measured at V _{dd} /2	Peak-to-Peak period jitter, CLK outputs		200		pS



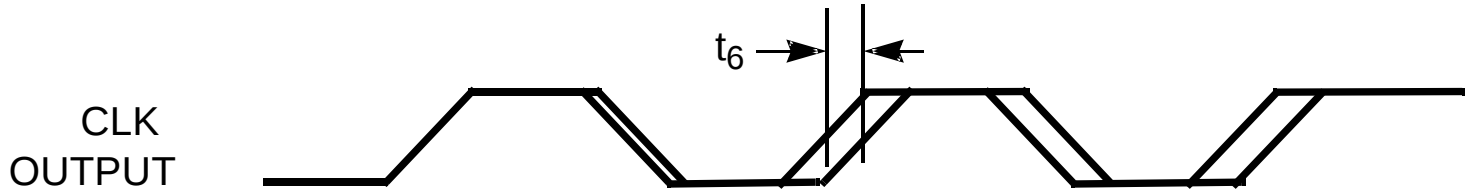
ALL OUTPUTS, DUTY CYCLE, RISE/FALL TIME



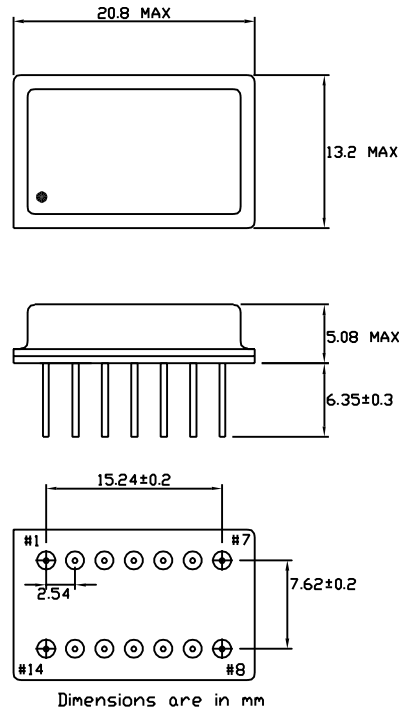
OUTPUT 3-STATE TIMING



CLK OUTPUT JITTER



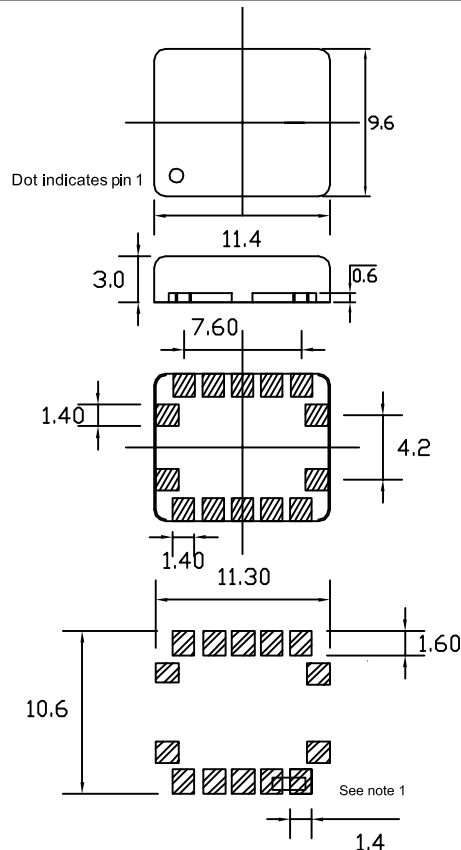
DIP



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 CLK E OUTPUT
 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 CLK E OUTPUT
 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