

## Factory Prog. 6 Output CMOS Oscillator Applications

Series **CCE6C**

- 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.
- Lower system cost
- Increased Integration

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



Part Numbering Example: CCE6C 1A 200.0 / 150.0 / 125.0 / 100.0 / 75.0 / 12.0

CCE6C	1A	200	150	125	100	75	12
<b>SERIES</b>	<b>PACKAGE STYLE</b>	<b>FREQUENCY A</b>	<b>FREQUENCY B</b>	<b>FREQUENCY C</b>	<b>FREQUENCY D</b>	<b>FREQUENCY E</b>	<b>FREQUENCY R</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	25 - 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
Output E CMOS	25		200	MHz
Output R Fixed		12		MHz
<b>Available Stability Options:</b>	-50		50	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> Ta=25C, Vdd=3.3V			±5	
<b>Static Discharge Voltage</b> Mil-Std 883, method 3015	2000			V
<b>Output Load:</b> CMOS, < 40 MHz CMOS, ≥ 40 MHz			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.



## Factory Prog. 6 Output CMOS Oscillator

Series **CCE6C****Electrical Characteristics**

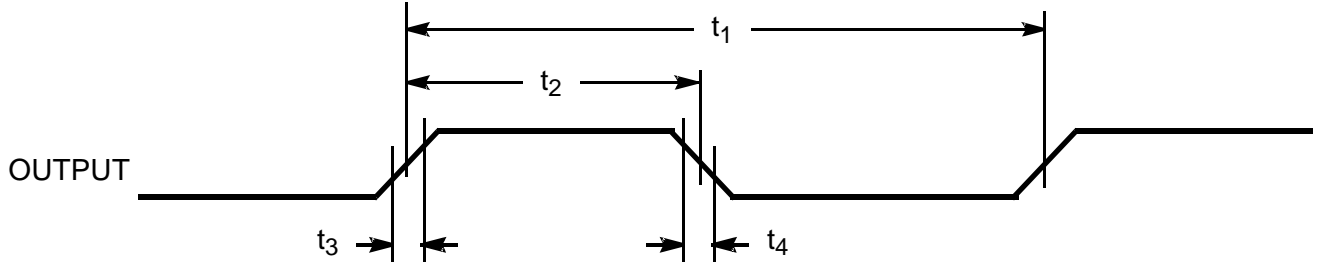
DESCRIPTION		CONDITIONS	MIN	TYP	MAX	UNIT
Ioh	Output High Current	Voh = (L)Vdd - 0.5, (L)Vdd = 3.3 V	12	24		mA
Iol	Output Low Current	Vol = .5, (L)Vdd = 3.3 V	12	24		mA
Vih	High Level Input Voltage	CMOS levels, % of Vdd	0.7			V
Vil	Low-Level Input Voltage	CMOS levels, % of Vdd			0.3	V
Iih	Input High Current	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@200 MHz; 1 output@66.666 MHz 1 output@100 MHz; 1 output@50 MHz 1 output@25 MHz; 1 output@12 MHz; Example 2: 1 output@200 Mhz; 1 output@155.52 MHz 1 output@100 Mhz; 1 output@77.76 MHz 1 output@50 Mhz; 1 output@12 MHz;		50  100		mA  mA
Idds	Shutdown Power Supply Curr	Shutdown active		5	20	μA

**Output Clock Switching Characteristics**

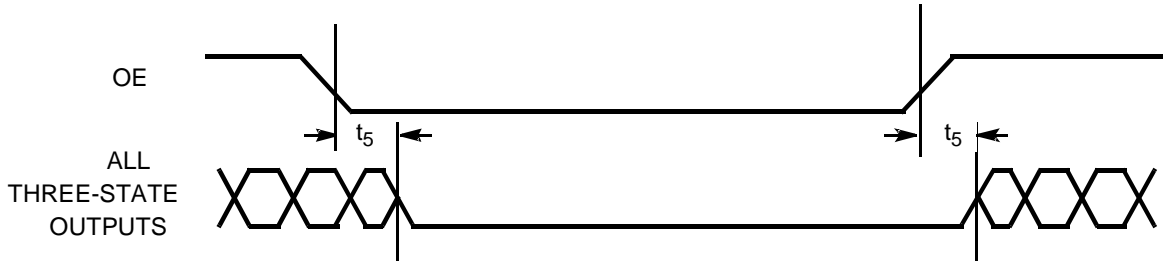
DESCRIPTION		CONDITIONS	MIN	TYP	MAX	UNIT
1/t1	Output Frequency	Clock output limit, CMOS, Commercial			200	MHz
t3	Rising Edge Slew Rate	Output clock rise time, 20% – 80% Vdd	0.75	1.4		nS
t4	Falling Edge Slew Rate	Output clock fall time, 20% – 80% Vdd	0.75	1.4		nS
t5	Output tri-state timing after SD/OE 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



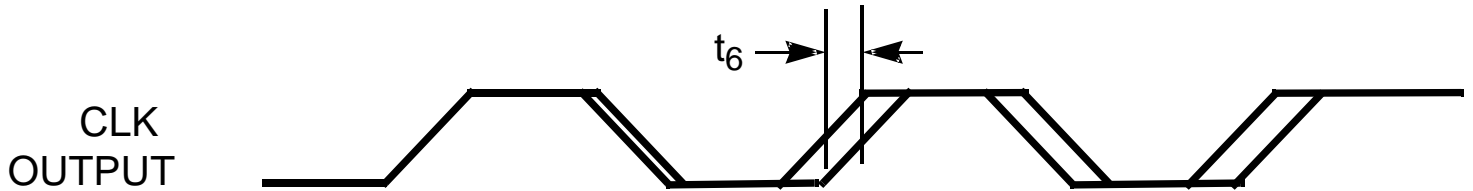
ALL OUTPUTS, DUTY CYCLE, RISE/FALL TIME



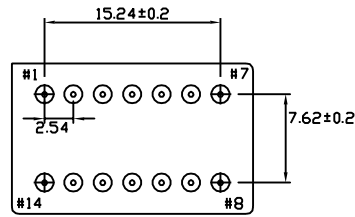
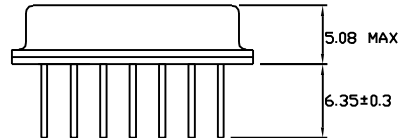
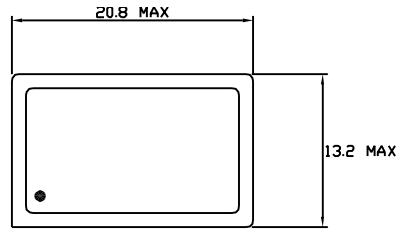
OUTPUT 3-STATE TIMING



CLK OUTPUT JITTER



DIP

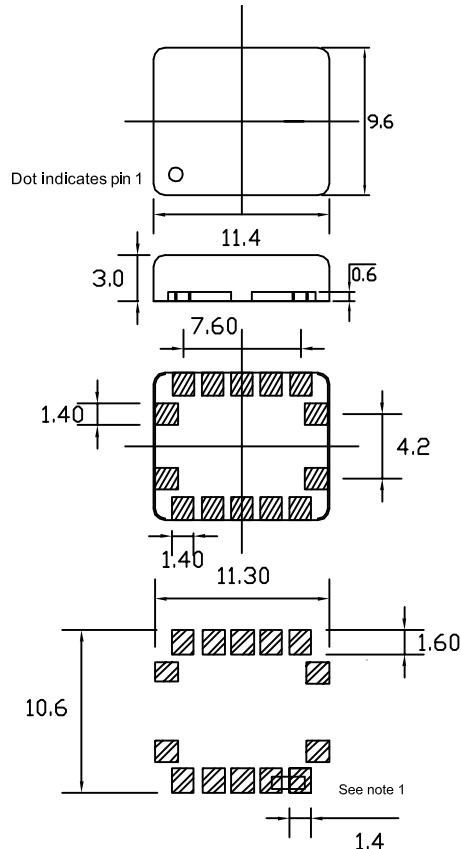


Dimensions are in mm

**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 12 MHz REF CLOCK OUTPUT
- 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 12 MHz REF CLOCK OUTPUT
- 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

