Factory Prog. 6 Output PECL Oscillator

- *Full Custom Multi-Frequency Programmable Osc*
- *Reduced EMI by turning off unused output*
- *Factory Programmable*
- *Differential PECL Output*
- *Industry-standard packaging saves on board space*
- *Mult. outputs 1 pkg vs. mult. osc & assoc. comp.*
- *Lower system cost*

Applications

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

Series CCE6E

Part Numbering Example: CCE6E 1A 200.0 - 150.0 / 125.0 / 100.0 / 12.0

CCE6E	1A	200	150	125	100	12
SERIES	PACKAGE STYLE	FREQUENCY P/P-	FREQUENCY A	FREQUENCY B	FREQUENCY C	FREQUENCY R
	1A=14 pin dip 9=9.6x11.4 SMD	100-400 MHz PECL	0.2 - 200 MHz	0.2 - 200 MHz	0.2 - 200 MHz	

Specifications:	Min	Typ	Max	Unit
Frequency Range:				
Output PECL +	100		400	MHz
Output PECL -	100		400	MHz
Output A CMOS	0.2		200	MHz
Output B CMOS	0.2		200	MHz
Output C CMOS	0.2		200	MHz
Output R Fixed		12		MHz
Available Stability Options:	-50		50	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			±5	
Static Discharge Voltage Mil-Std 883, method 3015	2000			V
Output Load: *				
CMOS, < 40 MHz			30	pF
CMOS, ≥ 40 MHz			15	pF
Output Level:	PCEL/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.
* LV PECL outputs require an external termination network

Cardinal Components, Inc.
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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 PECL output @155.52 MHz 1 CMOS output @19.44 MHz 1 CMOS output @38.88 MHz 1 CMOS output @77.76 MHz 1 CMOS output @12 MHz Example 2: 1 PECL output @400 MHz 1 CMOS output @106.25 MHz 1 CMOS output @200 MHz 1 CMOS output @100 MHz 1 CMOS output @12 MHz		29 59		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 Clock output limit, PECL, Commercial	0.2 100		200 400	MHz 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
v7	P+/P- Crossing Point	Crossing point ref. to Vdd/2, bal res. net	-0.2	0	0.2	V

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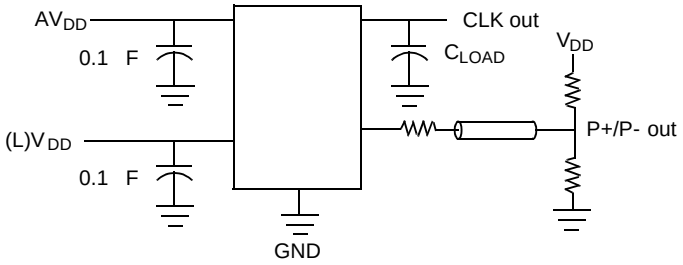
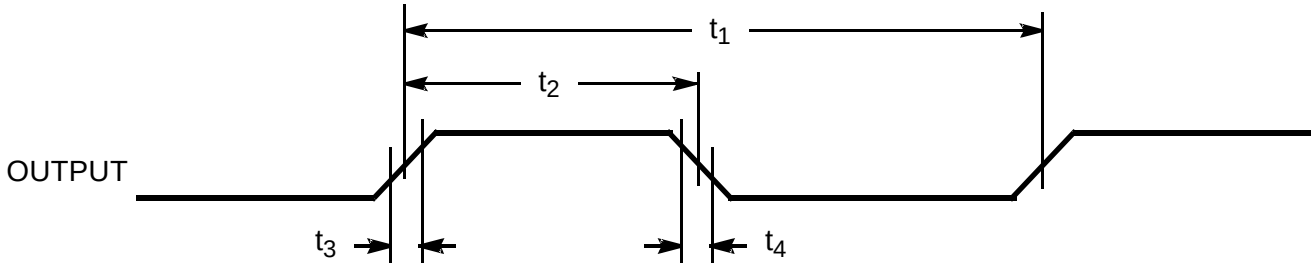
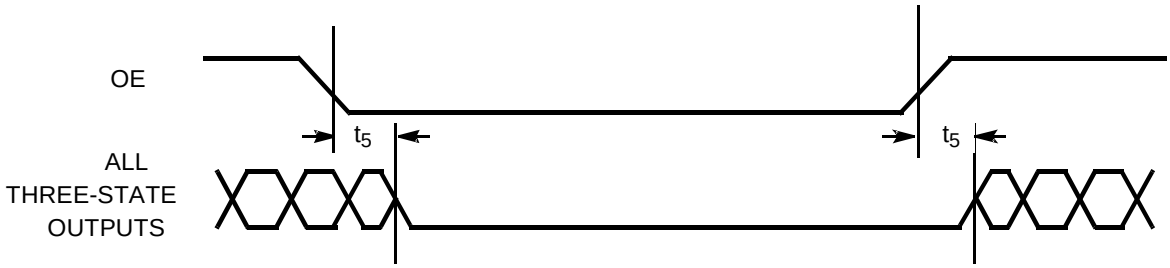
TEST CIRCUIT



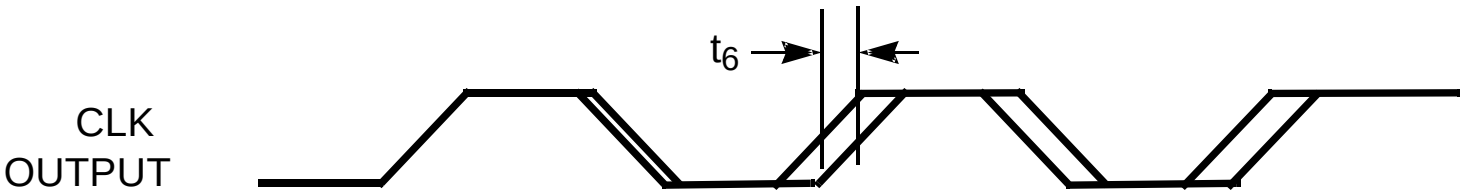
ALL OUTPUTS, DUTY CYCLE, RISE/FALL TIME



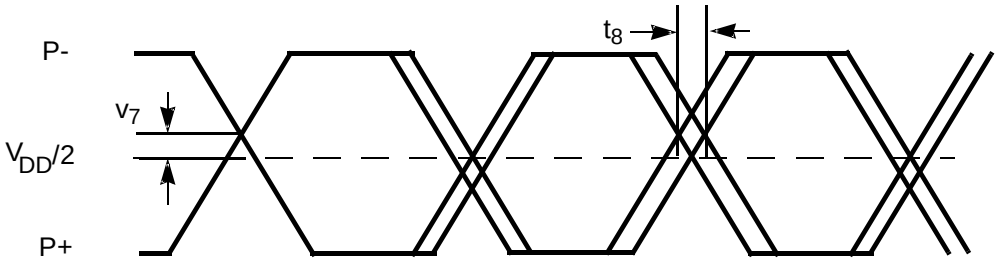
OUTPUT 3-STATE TIMING



CLK OUTPUT JITTER



P+/P- CROSSING POINT AND JITTER



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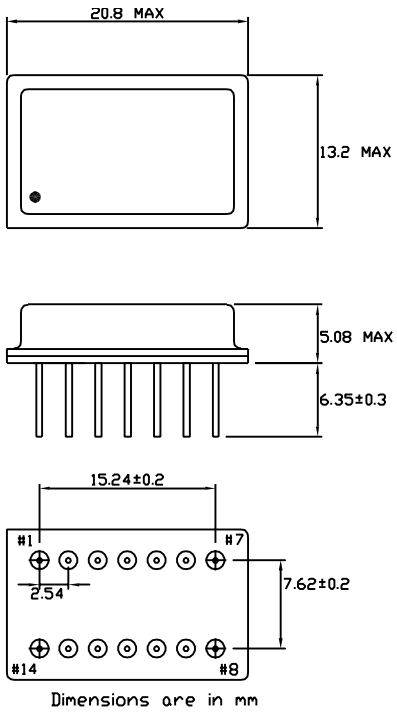
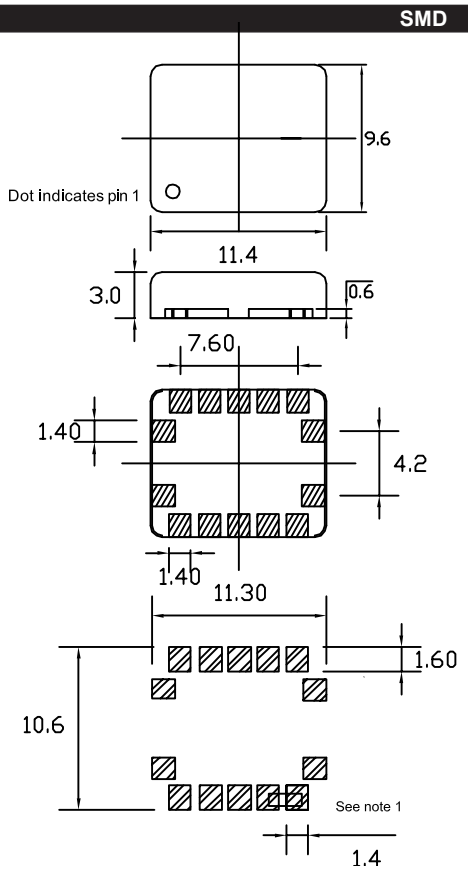
DIP



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 12 MHz REF CLOCK OUTPUT
PIN 9 PECL - OUTPUT
PIN10 PECL + 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 PECL - OUTPUT
PIN10 PECL + 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

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