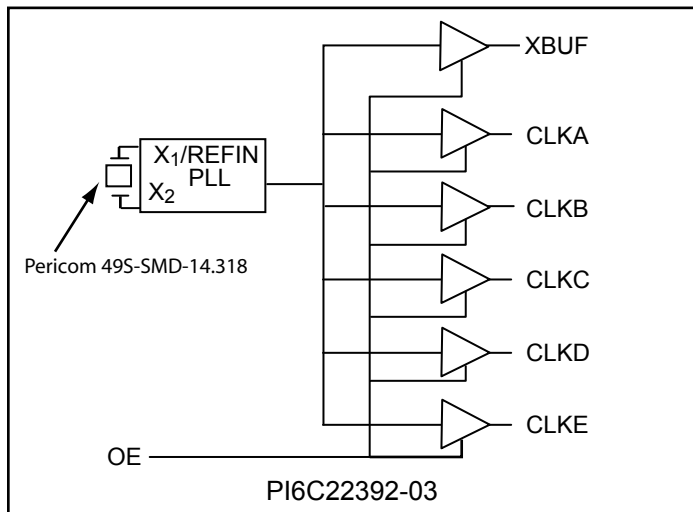


System and Peripheral Clock Generator

Features

- One 14.318 MHz Reference Clock
- One 100 MHz System Clock
- One 83.33 MHz MPEG Encoder Clock
- One 25 MHz Ethernet Clock
- Two 48 MHz Clocks
- Low jitter Design:
 - 400ps (typ) Cycle-to-Cycle Jitter
 - 400ps (typ) Peak-to-Peak Period Jitter
- 3.3V power supply
- Output Enable
- Packaging: (Pb-free and Green available)
 - 16-pin TSSOP (L)

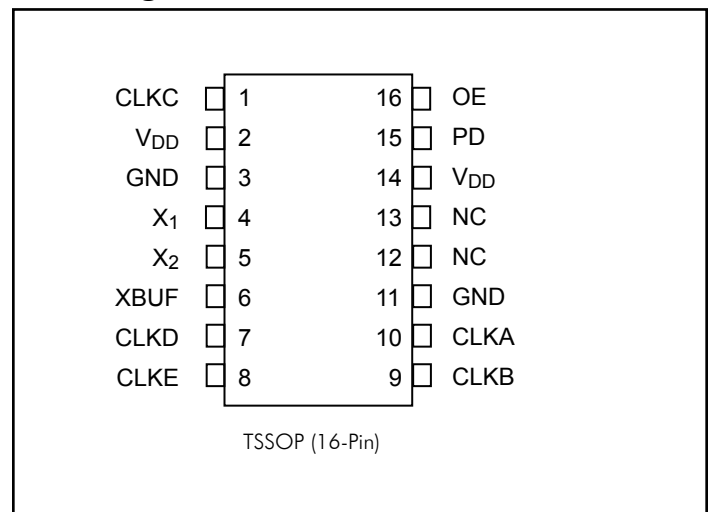
Block Diagram



Description

PI6C22392-03 is a low jitter, high performance clock generator which supports system and peripheral chips. Using Pericom's PLL technology, the PI6C22392-03 accepts a 14.318 MHz reference input and generates both a very accurate, stable system and peripheral clock. Clock outputs are tri-stated when OE is LOW.

Pin Configuration



Pin Description

Name	Pin	Description
CLKC	1	48 MHz clock output
V _{DD}	2, 14	Power supply
GND	3, 11	Ground
X ₁	4	Crystal or clock input
X ₂	5	Crystal connection
XBUF	6	Buffered reference clock output
CLKD	7	25 MHz clock output
CLKE	8	48 MHz clock output
CLKB	9	83.3 MHz clock output
CLKA	10	100 MHz clock output
NC	12, 13	No Connection
PD	15	Power down control pin. PD is active when HIGH. 120kΩ internal pull-down resistor.
OE	16	Active HIGH output enable. 120kΩ internal pull-up resistor.

Frequency Selection Table

Input Frequency ⁽¹⁾	CLKA	CLKB	CLKC	CLKD	CLKE	XBUF
14.318 MHz	100 MHz	83.331 MHz	48 MHz	25 MHz	48 MHz	14.318 MHz

Note 1. Recommend using Pericom 49S-SMD series HC 49/u Short SMD Crystal

Electrical Specifications

Absolute Maximum Ratings

Supply Voltage, V_{DD}	+5.5V
All Inputs and Outputs.....	-0.5V to $V_{DD}+0.5V$
Storage Temperature	-65 to +150°C
Junction Temperature	175°C

Note:

Absolute maximum ratings indicate limits, beyond which damage to the device may occur. It does not imply that the device should be operated at these limits. Recommended Operating Condition indicated conditions for which the device is intended to be functional, but no guarantee specific performance limits. The guaranteed specifications apply only for the conditions listed.

Operation Conditions

Power Supply Voltage (Vcc)	+3.0V to +3.6V
Ambient Temperature Range (T_a).....	0 to +70°C
Package Thermal Resistance TSSOP (θ_{ja}) Still-Air.....	90°C (typ)
TSSOP (θ_{jc}) Junction-to-Case.....	24°C (typ)

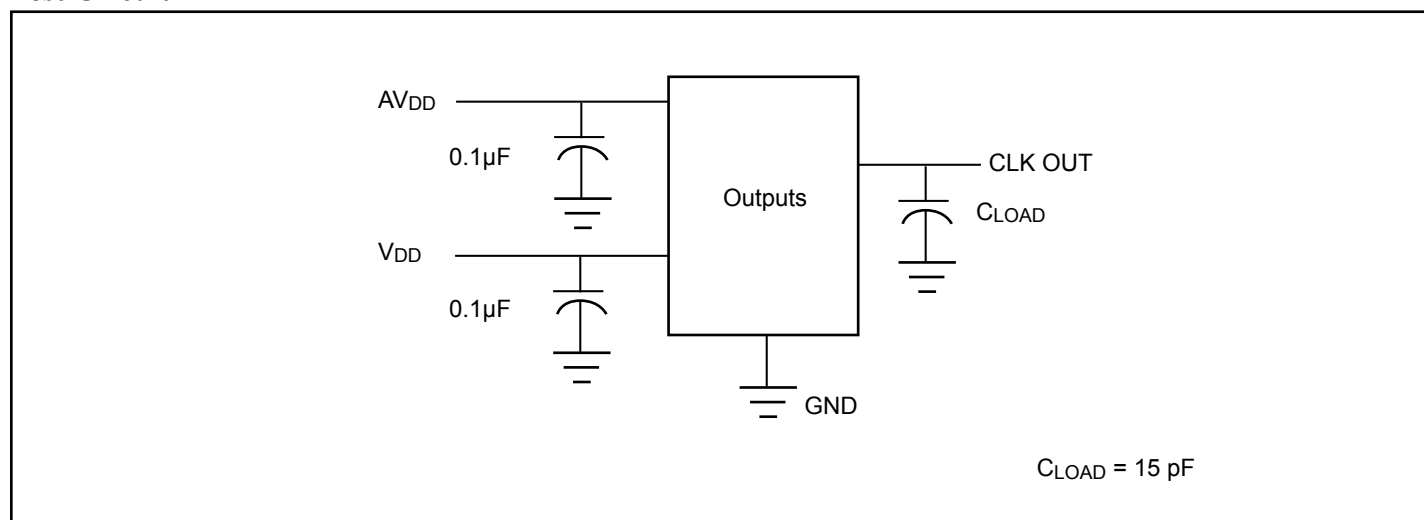
DC Characteristics ($V_{DD} = 3.3V \pm 10\%$, $T_a = 0$ to +70°C)

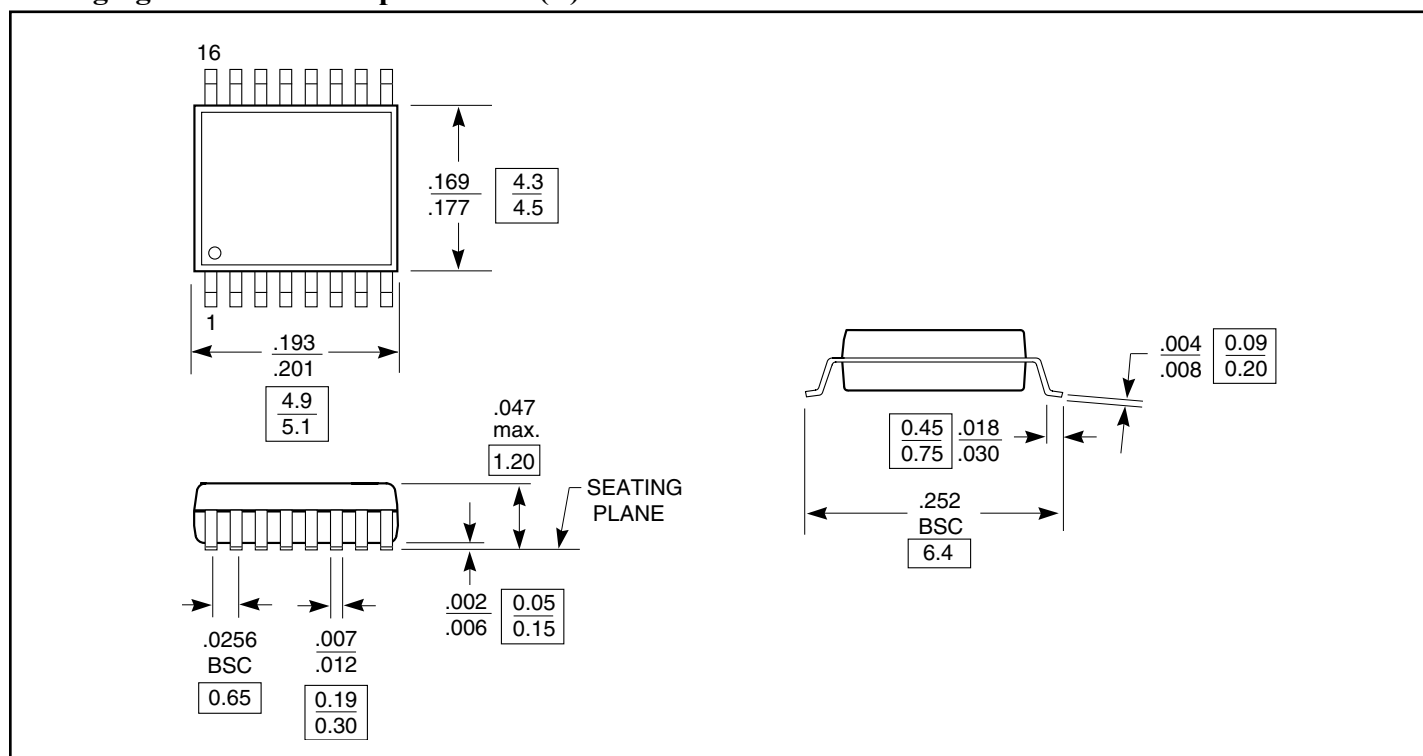
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{DD}	Operating Voltage		3.0	3.3	3.6	V
V_{IH}	Input High Voltage		2			V
V_{IL}	Input Low Voltage				0.8	V
V_{OH}	Output High Voltage	$I_{OH} = -4$ mA	$V_{DD} - 0.4$			V
V_{OH}	Output High Voltage	$I_{OH} = -12$ mA	2.4			V
V_{OL}	Output Low Voltage	$I_{OL} = +12$ mA			0.40	V
I_{DD}	Supply Current	No Load		100		mA
I_{DDQ}	Supply Current in Power Down Mode	PD = HIGH			0.3	mA
I_{OZ}	Output Leakage Current	Each output			1	μ A
Z_{OUT}	Nominal Output Impedance	$V_{OUT} = 0.5V_{DD}$		20		Ω
C_{IN}	Input Capacitance	Input pins except X_{IN} and X_{OUT}			7	pF
C_{xtal}	Input Capacitance	Input pins X1 and X2 only		31		pF
C_{OUT}	Clock Outputs Load Capacitance				15	pF

AC Characteristics ($V_{DD} = 3.3V \pm 10\%$, $T_A = 0$ to $+70^\circ C$)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t_{OR}	Output Clock Rise Time	20% to 80%, $C_I = 15pF$ load			2	ns
t_{OF}	Output Clock Fall Time	80% to 20%, $C_I = 15pF$ load			2	ns
t_{OD}	Output Duty Cycle	V_{out} measured at $V_{DD}/2$, $C_I = 15pF$ load	45	50	55	%
T_{jc}	Cycle-to-cycle jitter	V_{out} measured at $V_{DD}/2$		400		ps
T_{jp}	Peak-to-peak period jitter	Clock signal measured at $V_{DD}/2$		400		ps
T_{OE}	Time for output to enter or leave three-state mode after OE switches			100	200	ns
T_{lock}	Lock time	PLL lock time from power up		1.0	3.0	ms

Test Circuit



Packaging Mechanical: 16-pin TSSOP (L)

Ordering Information

Ordering Code	Package Code	Package Description	Operating Range
PI6C22392-03L	L	16-pin TSSOP	Commercial
PI6C22392-03LE	L	Pb-free and Green 16-pin TSSOP	Commercial

Notes:

- Thermal characteristics can be found on the company web site at www.pericom.com/packaging/
- E = Pb-free & Green
- X suffix = Tape/Reel