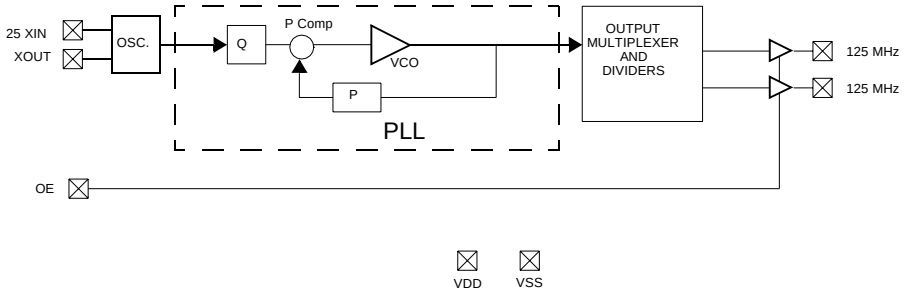
Dual Output 125-MHz Clock Generator

Features	Benefits
• **Integrated phase-locked loop**	Highest-performance PLL tailored for multimedia applications
• **Low skew, low jitter, high accuracy outputs**	Meets critical timing requirements in complex system designs
• **3.3V Operation**	

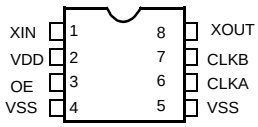
Part Number	Outputs	Input Frequency Range	Output Frequencies
CY26126	2	25 MHz	2 copies of 125 MHz (3.3V)

Logic Block Diagram



Pin Configurations

CY26126
8-pin SOIC



Pin Summary

Name	Pin Number	Description
XIN	1	Reference Input
VDD	2	3.3V Voltage Supply
OE	3	Output Enable
VSS	4	Ground
VSS	5	Ground
CLKA	6	125-MHz Clock Output A
CLKB	7	125-MHz Clock Output B
XOUT[1]	8	Reference Output

Absolute Maximum Conditions

Parameter	Description	Min.	Max.	Unit.
V_{DD}	Supply Voltage	–0.5	7.0	V
T_S	Storage Temperature[2]	–65	125	°C
T_J	Junction Temperature		125	°C
	Digital Inputs	V_{SS} – 0.3	V_{DD} + 0.3	V
	Digital Outputs referred to V_{DD}	V_{SS} – 0.3	V_{DD} + 0.3	V
	Electro-Static Discharge	2		kV

Recommended Operating Conditions

Parameter	Description	Min.	Typ.	Max.	Unit
V_{DD}	Operating Voltage	3.14	3.3	3.47	V
T_A	Ambient Temperature	0		70	°C
C_{LOAD}	Max. Load Capacitance			15	pF
P_{max}	Max. Output Power Dissipation			150	mW
f_{REF}	Reference Frequency		25		MHz
t_{PU}	Power-up time for all VDD's to reach minimum specified voltage (power ramps must be monotonic)	0.05		500	ms

DC Electrical Characteristics

Parameter	Description	Conditions	Min.	Typ.	Max.	Unit
I_{OH}	Output High Current	$V_{OH} = V_{DD} – 0.5$, $V_{DD} = 3.3V$	12	24		mA
I_{OL}	Output Low Current	$V_{OL} = 0.5$, $V_{DD} = 3.3V$	12	24		mA
V_{IH}	Input High Voltage	CMOS Levels 70% of V_{DD}	0.7			V_{DD}
V_{IL}	Input Low Voltage	CMOS Levels 30% of V_{DD}			0.3	V_{DD}
C_{IN}	Input Capacitance				7	pF
I_{IZ}	Input Leakage Current			5		µA
I_{DD}	Supply Current	Sum of Core and Output Current			35	mA

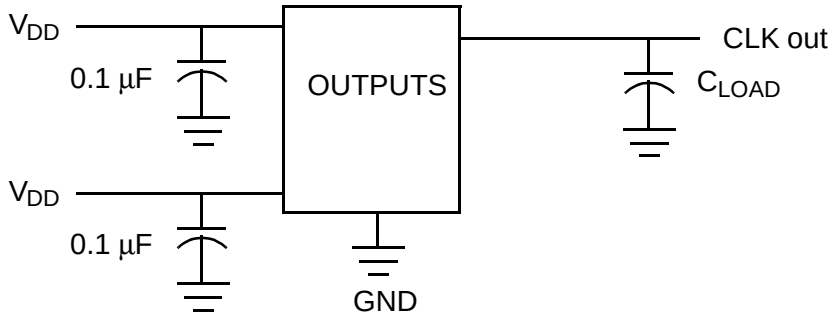
Notes:
1. Float XOUT pin if XIN is driven by reference clock (as opposed to crystal).
2. Rated for 10 years.

AC Electrical Characteristics (V_{DD} = 3.3V)[3]

Parameter	Description	Conditions	Min.	Typ.	Max.	Unit
	Output Duty Cycle	Duty Cycle is defined in *Figure 1*, 50% of V_{DD}	45	50	55	%
t3	Rising Edge Slew Rate	Output Clock Rise Time, 20% - 80% of V_{DD}	0.8	1.4		V/ns
t4	Falling Edge Slew Rate	Output Clock Fall Time, 80% - 20% of V_{DD}	0.8	1.4		V/ns
t9	Clock Jitter	Peak to Peak period jitter			200	ps
t10	PLL Lock Time				3	ms

Note:
3. Not 100% tested.

Test Circuit



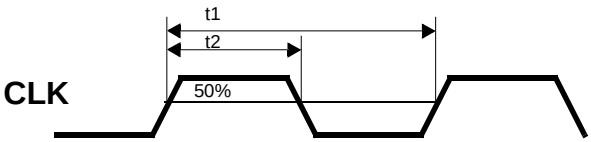


Figure 1. Duty Cycle Definition; DC = t2/t1

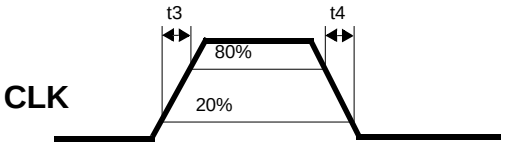


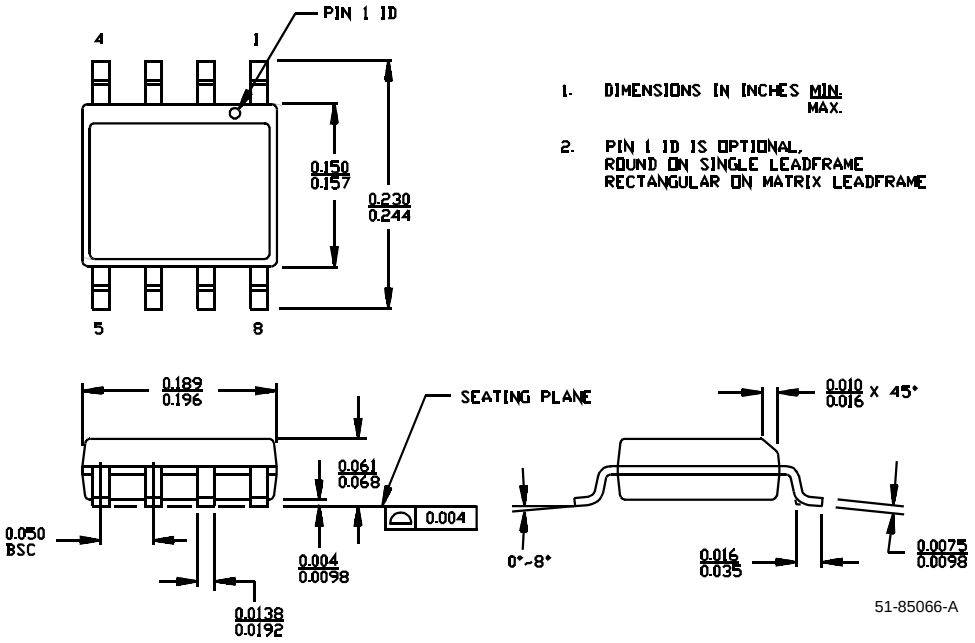
Figure 2. Rise and Fall Time Definitions

Ordering Information

Ordering Code	Package Name	Package Type	Operating Range	Operating Voltage
CY26126SC	S8	8-Pin SOIC	Commercial	3.3V

Package Diagram

8-Lead (150-Mil) SOIC S8



Document Title: CY26126 Dual Output 125-MHz Clock Generator Document Number: 38-07351				
REV.	**ECN NO.**	**Issue Date**	**Orig. of Change**	**Description of Change**
**	112233	03/01/02	CKN	New data sheet
*A	121891	12/14/02	RBI	Power up requirements added to Operating Conditions Information