



5V/3.3V ÷ 4 DIVIDER

ClockWorks™
SY10EL33/L
SY100EL33/L

FEATURES

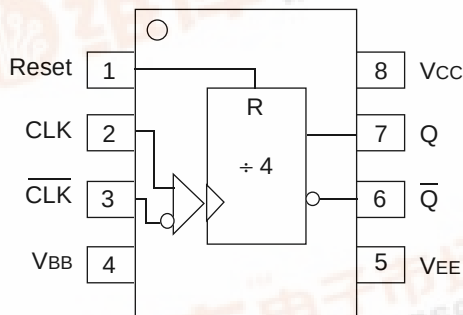
- 3.3V and 5V power supply options
- 650ps propagation delay
- 4.0GHz toggle frequency
- High bandwidth output transistors
- Internal 75KΩ input pull-down resistors
- Available in 8-pin SOIC package

DESCRIPTION

The SY10/100EL33/L are integrated ÷4 dividers. The differential clock inputs and the VBB allow a differential, single-ended or AC-coupled interface to the device. If used, the VBB output should be bypassed to ground with a 0.01μF capacitor. Also note that the VBB is designed to be used as an input bias on the EL33/L only; the VBB output has limited current sink and source capability.

The reset pin is asynchronous and is asserted on the rising edge. Upon power-up, the internal flip-flops will attain a random state; the reset input allows for the synchronization of multiple EL33/Ls in a system.

PIN CONFIGURATION/BLOCK DIAGRAM



SOIC
TOP VIEW

PIN NAMES

Pin	Function
CLK	Clock Inputs
Reset	Asynchronous Reset
VBB	Reference Voltage Output
Q	Data Outputs

DC ELECTRICAL CHARACTERISTICS⁽¹⁾

VEE (Min) to VEE (Max); VCC = GND

Symbol	Parameter	TA = -40°C			TA = 0°C			TA = +25°C			TA = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
IEE	Power Supply Current													mA
	10EL	—	27	33	—	27	33	—	27	33	—	27	33	
	100EL	—	27	33	—	27	33	—	27	33	—	31	37	
VBB	Output Reference Voltage													V
	10EL	-1.43	—	-1.30	-1.38	—	-1.27	-1.35	—	-1.25	-1.31	—	-1.19	
	100EL	-1.38	—	-1.26	-1.38	—	-1.26	-1.38	—	-1.26	-1.38	—	-1.26	
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA

NOTE:

1. Parametric values specified at:
- | | | |
|---------------------------|---------------------|------------------|
| 5 volt Power Supply Range | 100EL33 Series: | -4.2V to -5.5V. |
| | 10EL33 Series | -4.75V to -5.5V. |
| 3 volt Power Supply Range | 10/100EL33L Series: | -3.0V to -3.8V. |

AC ELECTRICAL CHARACTERISTICS⁽¹⁾

VEE (Min) to VEE (Max); VCC = GND

Symbol	Parameter	TA = -40°C			TA = 0°C			TA = +25°C			TA = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
f _{MAX}	Maximum Toggle Frequency	3.4	4.2	—	3.8	4.2	—	3.8	4.2	—	3.8	4.2	—	GHz
t _{PLH} t _{PHL}	Prop. Delay to Output D Reset to Q	490	630 310	770 460	540 610	630 360	720 460	550 560	640 360	730 460	590 560	670 380	760 480	ps 580
V _{PP}	Minimum Input Swing ⁽²⁾	150	—	—	150	—	—	150	—	—	150	—	—	mV
t _r t _f	Output Rise/Fall Times Q (20% to 80%)	100	225	350	100	225	350	100	225	350	100	225	350	ps

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- | | | |
|---------------------------|---------------------|------------------|
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| | 10EL33 Series | -4.75V to -5.5V. |
| 3 volt Power Supply Range | 10/100EL33L Series: | -3.0V to -3.8V. |
2. Minimum input swing for which AC parameters are guaranteed.

PRODUCT ORDERING CODE**3.3V**

Ordering Code	Package Type	Operating Range	VEE Range (V)
SY10EL33LZC	Z8-1	Commercial	-3.0 to -3.8
SY10EL33LZCTR	Z8-1	Commercial	-3.0 to -3.8
SY100EL33LZC	Z8-1	Commercial	-3.0 to -3.8
SY100EL33LZCTR	Z8-1	Commercial	-3.0 to -3.8

5V

Ordering Code	Package Type	Operating Range	VEE Range (V)
SY10EL33ZC	Z8-1	Commercial	-4.75 to -5.5
SY10EL33ZCTR	Z8-1	Commercial	-4.75 to -5.5
SY100EL33ZC	Z8-1	Commercial	-4.2 to -5.5
SY100EL33ZCTR	Z8-1	Commercial	-4.2 to -5.5

8 LEAD SOIC .150" WIDE (Z8-1)

