

5V/3.3V ÷ 2 DIVIDER

Precision Edge[®] SY10EL32V SY100EL32V

FEATURES

- 3.3V and 5V power supply options
- 510ps propagation delay
- 3.0GHz toggle frequency
- High bandwidth output transistions
- Internal 75KΩ input pull-down resistors
- Available in 8-pin SOIC package



Precision Edge[®]

DESCRIPTION

The SY10/100EL32V are integrated $\div 2$ 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 EL32V 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-on, the internal flip-flop will attain a random state; the reset allows for the synchronization of multiple EL32Vs in a system.

PIN NAMES

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

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PACKAGE/ORDERING INFORMATION



8-Pin SOIC (Z8-1)

Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish	
SY10EL32VZC	Z8-1	Commercial	HEL32V	Sn-Pb	
SY10EL32VZCTR ⁽²⁾	Z8-1	Commercial	HEL32V	Sn-Pb	
SY100EL32VZC	Z8-1	Commercial	XEL32V	Sn-Pb	
SY100EL32VZCTR ⁽²⁾	Z8-1	Commercial	XEL32V	Sn-Pb	
SY10EL32VZI	Z8-1	Industrial	HEL32V	Sn-Pb	
SY10EL32VZITR ⁽²⁾	Z8-1	Industrial	HEL32V	Sn-Pb	
SY100EL32VZI	Z8-1	Industrial	XEL32V	Sn-Pb	
SY100EL32VZITR ⁽²⁾	Z8-1	Industrial	XEL32V	Sn-Pb	
SY10EL32VZG ⁽³⁾	Z8-1	Industrial	HEL32V with Pb-Free bar-line indicator	Pb-Free NiPdAu	
SY10EL32VZGTR ^(2, 3)	Z8-1	Industrial	HEL32V with Pb-Free bar-line indicator	Pb-Free NiPdAu	
SY100EL32VZG ⁽³⁾	Z8-1	Industrial	XEL32V with Pb-Free bar-line indicator	Pb-Free NiPdAu	
SY100EL32VZGTR ^(2, 3)	Z8-1	Industrial	XEL32V with Pb-Free bar-line indicator	Pb-Free NiPdAu	

Notes:

1. Contact factory for die availability. Dice are guaranteed at $T_A = 25^{\circ}C$, DC Electricals only.

2. Tape and Reel.

3. Pb-Free package is recommended for new designs.

DC ELECTRICAL CHARACTERISTICS⁽¹⁾

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

			TA = -40°C		C	TA = 0°C			TA = +25°C			TA = +85°C			
Symbol	Parameter		Min.	Тур.	Max.	Min.	Тур.	Max.	Min.	Тур.	Max.	Min.	Тур.	Max.	Unit
IEE	Power Supply														mA
	Current	10EL	—	25	30	—	25	30	—	25	30	—	25	30	
		100EL	—	25	30	—	25	30	—	25	30	—	29	35	
VBB	Output Reference	e													V
	Voltage	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	
Іін	Input HIGH Curr	ent	_	_	150		_	150		_	150	_	_	150	μΑ

NOTE:

1. Parametric values specified at: 1

10/100EL32V Series:

-3.0V to -5.5V.

AC ELECTRICAL CHARACTERISTICS⁽¹⁾

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

		TA = -40°C			TA = 0°C			TA = +25°C			TA = +85°C			
Symbol	Parameter	Min.	Тур.	Max.	Unit									
fмах	Maximum Toggle Frequency	2.2	3.0	—	2.6	3.0	_	2.6	3.0	—	2.6	3.0	—	GHz
tpd	Prop Delay to Output D Reset to Q	360 390	500 540	640 690	410 440	500 540	590 640	420 440	510 540	600 640	450 450	540 550	630 650	ps
Vpp	Minimum Input Swing ⁽²⁾	150			150			150		_	150	_		mV
VCMR	Common Mode Range ⁽³⁾	-1.3		-0.4	-1.4	_	-0.4	-1.4		-0.4	-1.4	_	-0.4	V
tr tf	Output Rise/Fall Times Q (20% to 80%)	100	225	350	100	225	350	100	225	350	100	225	350	ps

NOTES:

1. Parametric values specified at: 10/100EL32V Series:

-3.0V to -5.5V.

2. Minimum input swing for which AC parameters are guaranteed. The device has a DC gain of \approx 40.

3. The CMR range is referenced to the most positive side of the differential input signal. Normal operation is obtained if the HIGH level falls within the specified range and the peak-to-peak voltage lies between VPP min. and 1V. The lower end of the CMR range varies 1:1 with VEE. The numbers in the spec table assume a nominal VEE = -3.3V. Note for PECL operation, the VCMR (min) will be fixed at 3.3V – |VCMR (min)|.

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



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