5V/3.3V 1:2 DIFFERENTIAL FANOUT BUFFER

FEATURES

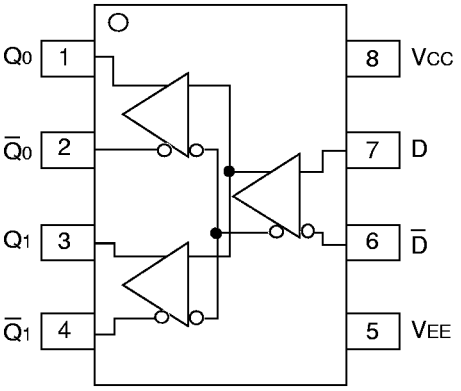
- 3.3V and 5V power supply options
- 265ps propagation delay
- 5ps skew between outputs
- High bandwidth output transitions
- Internal 75KΩ input pull-down resistors
- Replaces SY10/100EL11
- Improved output waveform characteristics
- ESD protection of 2000V
- Available in 8-pin SOIC package

DESCRIPTION

The SY10/100EL11V are 1:2 differential fanout gates. These devices are functionally similar to the E111A/L devices, with higher performance capabilities. Having within-device skews and output transition times significantly improved over the E111A/L, the EL11V is ideally suited for those applications which require the ultimate in AC performance.

The differential inputs of the EL11V employ clamping circuitry to maintain stability under open input conditions. If the inputs are left open (pulled to V_{EE}), the Q outputs will go LOW.

PIN CONFIGURATION/BLOCK DIAGRAM



SOIC
TOP VIEW

PIN NAMES

Pin	Function
D	Data Inputs
Q_0, Q_1	Data Outputs

Rev.: C Amendment: /0
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DC ELECTRICAL CHARACTERISTICS[1]

V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = GND

Symbol	Parameter	T_A = –40°C			T_A = 0°C			T_A = +25°C			T_A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I_{EE}	Power Supply Current													mA
	10EL	—	26	31	15	26	31	15	26	31	15	26	31	
	100EL	—	26	31	15	26	31	15	26	31	15	30	36	
I_{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	µA

NOTE:

1. Parametric values specified at: 10/100EL11V Series: -3.0V to -5.5V.

AC ELECTRICAL CHARACTERISTICS[1]

V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = GND

Symbol	Parameter	T_A = –40°C			T_A = 0°C			T_A = +25°C			T_A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
t_{PLH} t_{PHL}	Propagation Delay to Output D	135	260	385	185	260	335	190	265	340	215	290	365	ps
t_{skew}	Within-Device Skew[2]	—	5	—	—	5	20	—	5	20	—	5	20	ps
	Duty Cycle Skew[3]	—	5	—	—	5	20	—	5	20	—	5	20	
V_{PP}	Minimum Input Swing[4]	150	—	—	150	—	—	150	—	—	150	—	—	mV
V_{CMR}	Common Mode Range[5]	–1.3	—	–0.4	–1.4	—	–0.4	–1.4	—	–0.4	–1.4	—	–0.4	V
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

NOTES:

1. Parametric values specified at: 10/100EL11V Series: -3.0V to -5.5V.
2. Within-device skew defined as identical transitions on similar paths through a device.
3. Duty cycle skew is the difference between a t_{PLH} and t_{PHL} propagation delay through a device.
4. Minimum input swing for which AC parameters are guaranteed. The device has a DC gain of ≈40.
5. 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 V_{PP} min. and 1V. The lower end of the CMR range varies 1:1 with V_{EE}. The numbers in the spec table assume a nominal V_{EE} = –3.3V. Note for PECL operation, the V_{CMR} (min) will be fixed at 3.3V – |V_{CMR} (min)|.

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range	V_{EE} Range (V)
SY10EL11VZC	Z8-1	Commercial	-3.0 to -5.5
SY10EL11VZCTR	Z8-1	Commercial	-3.0 to -5.5
SY100EL11VZC	Z8-1	Commercial	-3.0 to -5.5
SY100EL11VZCTR	Z8-1	Commercial	-3.0 to -5.5

8 LEAD PLASTIC SOIC (Z8-1)