

AZ10LVEL16

AZ100LVEL16



Differential Receiver

FEATURES

- 250ps Propagation Delay
- High Bandwidth Output Transitions
- 75k Ω Internal Input Pulldown Resistors
- Direct Replacement for Motorola MC100LVEL16
- 3.3 Volt Power Supply
- Manufactured under License by Lucent Technologies

PACKAGE AVAILABILITY

SUFFIX	DESCRIPTION
D	Plastic 8 SOIC
T	Plastic 8 TSSOP (3x3mm)
X	DIE

DESCRIPTION

The AZ10LVEL/100LVEL16 is a differential receiver. The device is functionally equivalent to the E116 device with higher performance capabilities. With output transition times significantly faster than the E116, the LVEL16 is ideally suited for interfacing with high frequency sources.

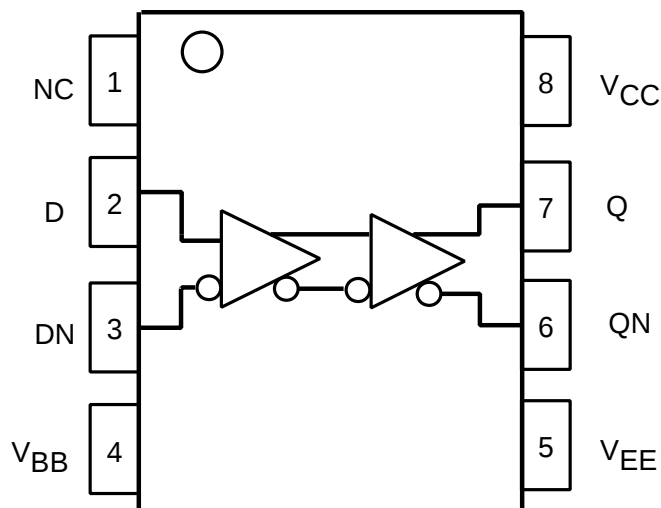
The LVEL16 provides a V_{BB} output for either single-ended use or as a DC bias for AC coupling to the device. The V_{BB} pin should be used only as a bias for the LVEL16 as its current sink/source capability is limited. Whenever used, the V_{BB} pin should be bypassed to ground via a 0.01 μ F capacitor.

Under open input conditions (pulled to V_{EE}) the Q outputs are low.

PIN DESCRIPTION

PIN	FUNCTION
D	Data Inputs
Q	Data Outputs
V_{BB}	Ref. Voltage Output

LOGIC DIAGRAM AND PINOUT ASSIGNMENT



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DC Characteristics ($V_{EE} = 3.0V$ to $3.8V$; $V_{CC} = GND$)

Symbol	Characteristic	-40 °C			0 °C			25 °C			85 °C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
I_{EE}	Power Supply 10EL		18		14	18	22	14	18	22	14	18	22	mA
	Current 100EL		18		14	18	22	14	18	22	16	21	26	
V_{BB}	Reference Voltage 10EL	-1.43		-1.30	-1.38		-1.27	-1.35		-1.25	-1.31		-1.19	V
	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

AC Characteristics ($V_{EE} = 3.0V$ to $3.8V$; $V_{CC} = GND$)

Symbol	Characteristic	-40 °C			0 °C			25 °C			85 °C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
t_{PLH} t_{PHL}	Propagation Delay to Output (Diff) (SE)		250 250		175 125	250 250	325 375	175 125	250 250	325 375	205 155	280 280	355 405	ps
t_{SKEW}	Duty Cycle Skew ¹ (Diff)		5			5	20		5	20		5	20	ps
V_{PP}	Minimum Input Swing ²	150			150			150			150			mV
V_{CMR}	Common Mode Range ³	V_{bb}^{3}		-0.4	V_{bb}^{3}		-0.4	V_{bb}^{3}		-0.4	V_{bb}^{3}		-0.4	V
t_r t_f	Output Rise/Fall Times Q (20% - 80%)		225		100	225	350	100	225	350	100	225	350	ps

1. Duty cycle skew is the difference between a TPLH and TPHL propagation delay through a device.
2. Minimum input swing for which AC parameters guaranteed. The device has a DC gain of ≈ 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 V_{ppmin} and 1V. The lower end of the CMR range is equal to V_{bb} .

