1:2 Differential Fanout Buffer

MC10EL11
MC100EL11

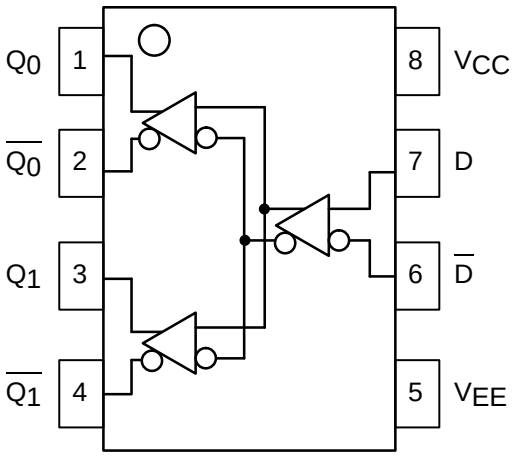
The MC10EL/100EL11 is a differential 1:2 fanout buffer. The device is functionally similar to the E111 device but with higher performance capabilities. Having within-device skews and output transition times significantly improved over the E111, the EL11 is ideally suited for those applications which require the ultimate in AC performance.

The differential inputs of the EL11 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.

- 265ps Propagation Delay
- 5ps Skew Between Outputs
- High Bandwidth Output Transitions
- 75kΩ Internal Input Pulldown Resistors
- >1000V ESD Protection

D SUFFIX
PLASTIC SOIC PACKAGE
CASE 751-05

LOGIC DIAGRAM AND PINOUT ASSIGNMENT



PIN DESCRIPTION

PIN	FUNCTION
D Q0, Q1	Data Inputs Data Outputs

DC CHARACTERISTICS (V_{EE} = V_{EE}(min) to V_{EE}(max); V_{CC} = GND)

		–40°C			0°C			25°C			85°C			
Symbol	**Characteristic**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Unit**
I_{EE}	Power Supply Current 10EL 100EL		 26 26	 31 31		 26 26	 31 31		 26 26	 31 31		 26 30	 31 36	mA
V_{EE}	Power Supply Voltage 10EL 100EL	 –4.75 –4.20	 –5.2 –4.5	 –5.5 –5.5	 –4.75 –4.20	 –5.2 –4.5	 –5.5 –5.5	 –4.75 –4.20	 –5.2 –4.5	 –5.5 –5.5	 –4.75 –4.20	 –5.2 –4.5	 –5.5 –5.5	V
I_{IH}	Input HIGH Current			150			150			150			150	µA

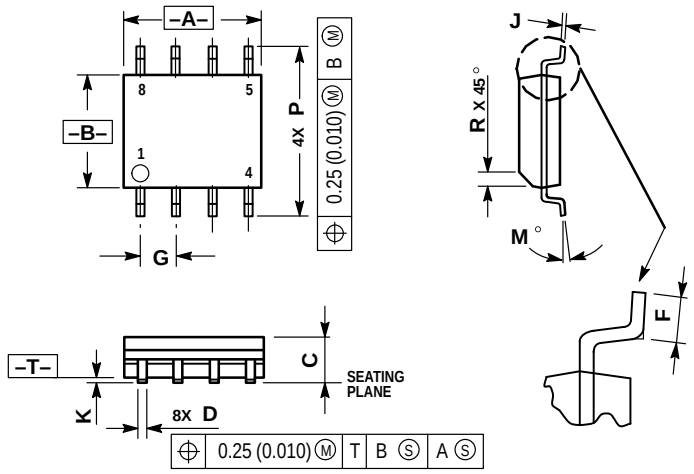
AC CHARACTERISTICS (V_{EE} = V_{EE}(min) to V_{EE}(max); V_{CC} = GND)

		–40°C			0°C			25°C			85°C			
Symbol	**Characteristic**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Unit**
t_{PLH} t_{PHL}	Propagation Delay to Output	135	260	385	185	260	335	190	265	340	215	290	365	ps
t_{SKEW}	Within-Device Skew[1] Duty Cycle Skew[2]		5 5			5 5	20 20		5 5	20 20		5 5	20 20	ps
V_{PP}	Minimum Input Swing[3]	150			150			150			150			mV
V_{CMR}	Common Mode Range[4]	–0.4		See[4]	–0.4		See[4]	–0.4		See[4]	–0.4		See[4]	V
t_r t_f	Output Rise/Fall Times Q (20% – 80%)	100	225	350	100	225	350	100	225	350	100	225	350	ps

1. Within-device skew defined as identical transitions on similar paths through a device.
2. Duty cycle skew is the difference between a TPLH and TPHL propagation delay through a device.
3. Minimum input swing for which AC parameters guaranteed. The device has a DC gain of ≈40.
4. 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 is dependent on V_{EE} and is equal to V_{EE} + 2.5V.

OUTLINE DIMENSIONS

D SUFFIX
PLASTIC SOIC PACKAGE
CASE 751–05
ISSUE P



NOTES:
1. DIMENSIONS A AND B ARE DATUMS AND T IS A DATUM SURFACE.
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
3. DIMENSIONS ARE IN MILLIMETER.
4. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
5. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
6. DIMENSION D DOES NOT INCLUDE MOLD PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS	
DIM	MIN	MAX
A	4.80	5.00
B	3.80	4.00
C	1.35	1.75
D	0.35	0.49
F	0.40	1.25
G	1.27 BSC	
J	0.18	0.25
K	0.10	0.25
M	0 °	7 °
P	5.80	6.20
R	0.25	0.50

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