

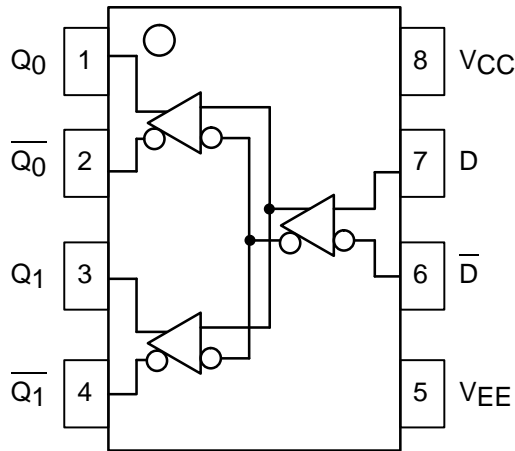
# 1:2 Differential Fanout Buffer

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
- 75k $\Omega$  Internal Input Pulldown Resistors
- >1000V ESD Protection

## LOGIC DIAGRAM AND PINOUT ASSIGNMENT



# MC10EL11 MC100EL11



**D SUFFIX**  
PLASTIC SOIC PACKAGE  
CASE 751-05

## PIN DESCRIPTION

PIN	FUNCTION
D Q0, Q1	Data Inputs Data Outputs



# MC10EL11 MC100EL11

## DC CHARACTERISTICS ( $V_{EE} = V_{EE}(\min)$ to $V_{EE}(\max)$ ; $V_{CC} = \text{GND}$ )

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 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	$\mu\text{A}$

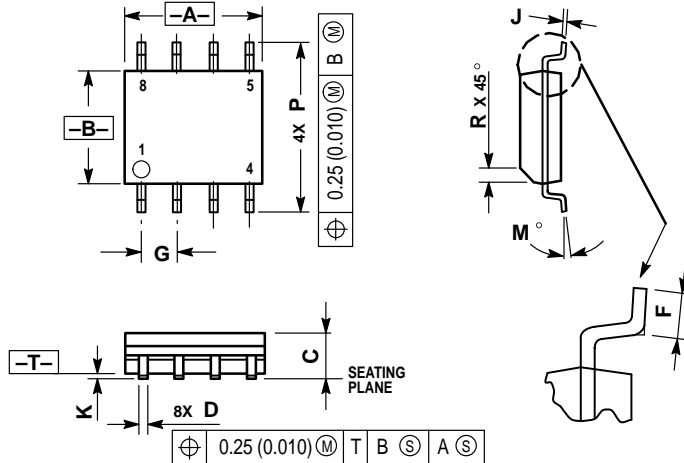
## AC CHARACTERISTICS ( $V_{EE} = V_{EE}(\min)$ to $V_{EE}(\max)$ ; $V_{CC} = \text{GND}$ )

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	135	260	385	185	260	335	190	265	340	215	290	365	ps
$t_{SKEW}$	Within-Device Skew <sup>1</sup> Duty Cycle Skew <sup>2</sup>		5 5			5 5	20 20		5 5	20 20		5 5	20 20	ps
$V_{PP}$	Minimum Input Swing <sup>3</sup>	150			150			150			150			mV
$V_{CMR}$	Common Mode Range <sup>4</sup>	-0.4		See <sup>4</sup>	-0.4		See <sup>4</sup>	-0.4		See <sup>4</sup>	-0.4		See <sup>4</sup>	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  $\approx 40$ .
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  $V_{ppmin}$  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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