

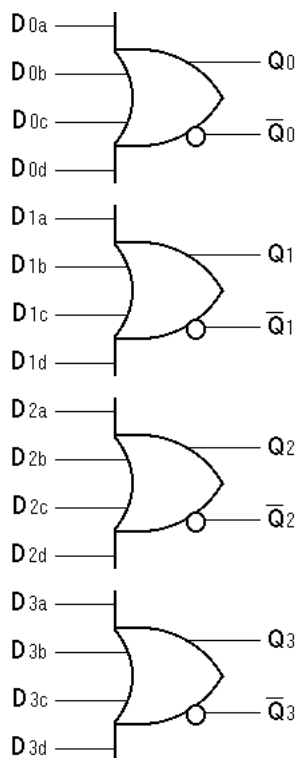
FEATURES

- 500ps max. propagation delay
- Extended 100E VEE range of -4.2V to -5.5V
- True and complementary outputs
- Fully compatible with industry standard 10KH, 100K I/O levels
- Internal 75K Ω input pulldown resistors
- Fully compatible with Motorola MC10E/100E101
- Available in 28-pin PLCC package

DESCRIPTION

The SY10/100E101 are quad 4-input OR/NOR gates designed for use in new, high-performance ECL systems. The E101 features both true and complementary outputs.

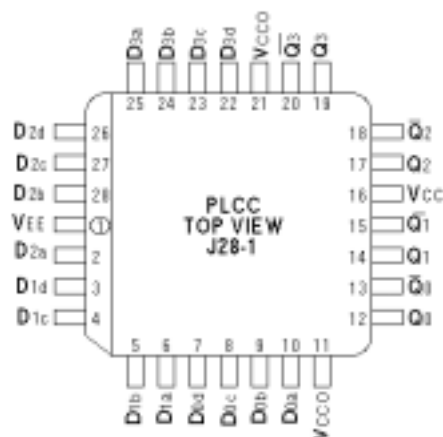
BLOCK DIAGRAM



PIN NAMES

Pin	Function
Dna, Dnb, Dnc, Dnd	Data Inputs
Q0-Q3	True Outputs
$\bar{Q}0-\bar{Q}3$	Inverting Outputs
Vcco	Vcc to Output

PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)

Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E101JI	J28-1	Industrial	SY10E101JI	Sn-Pb
SY10E101JITR ⁽²⁾	J28-1	Industrial	SY10E101JI	Sn-Pb
SY100E101JI	J28-1	Industrial	SY100E101JI	Sn-Pb
SY100E101JITR ⁽²⁾	J28-1	Industrial	SY100E101JI	Sn-Pb
SY10E101JC	J28-1	Commercial	SY10E101JC	Sn-Pb
SY10E101JCTR ⁽²⁾	J28-1	Commercial	SY10E101JC	Sn-Pb
SY100E101JC	J28-1	Commercial	SY100E101JC	Sn-Pb
SY100E101JCTR ⁽²⁾	J28-1	Commercial	SY100E101JC	Sn-Pb
SY10E101JY ⁽³⁾	J28-1	Industrial	SY10E101JY with Pb-Free bar-line indicator	Matte-Sn
SY10E101JYTR ^(2, 3)	J28-1	Industrial	SY10E101JY with Pb-Free bar-line indicator	Matte-Sn
SY100E101JY ⁽³⁾	J28-1	Industrial	SY100E101JY with Pb-Free bar-line indicator	Matte-Sn
SY100E101JYTR ^(2, 3)	J28-1	Industrial	SY100E101JY with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Contact factory for die availability. Dice are guaranteed at $T_A = 25^\circ\text{C}$, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

LOGIC EQUATION

$$Q_n = D_{na} + D_{nb} + D_{nc} + D_{nd}$$

DC ELECTRICAL CHARACTERISTICS⁽¹⁾

$V_{EE} = V_{EE}(\text{Min.})$ to $V_{EE}(\text{Max.})$; $V_{CC} = V_{CCO} = \text{GND}$

Symbol	Parameter	$T_A = -40^\circ\text{C}$			$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I_{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA
I_{EE}	Power Supply Current													mA
	10EL	—	30	36	—	30	36	—	30	36	—	30	36	
	100EL	—	30	36	—	30	36	—	30	36	—	35	42	

Note:

1. Specification for packaged product only.

AC ELECTRICAL CHARACTERISTICS⁽³⁾

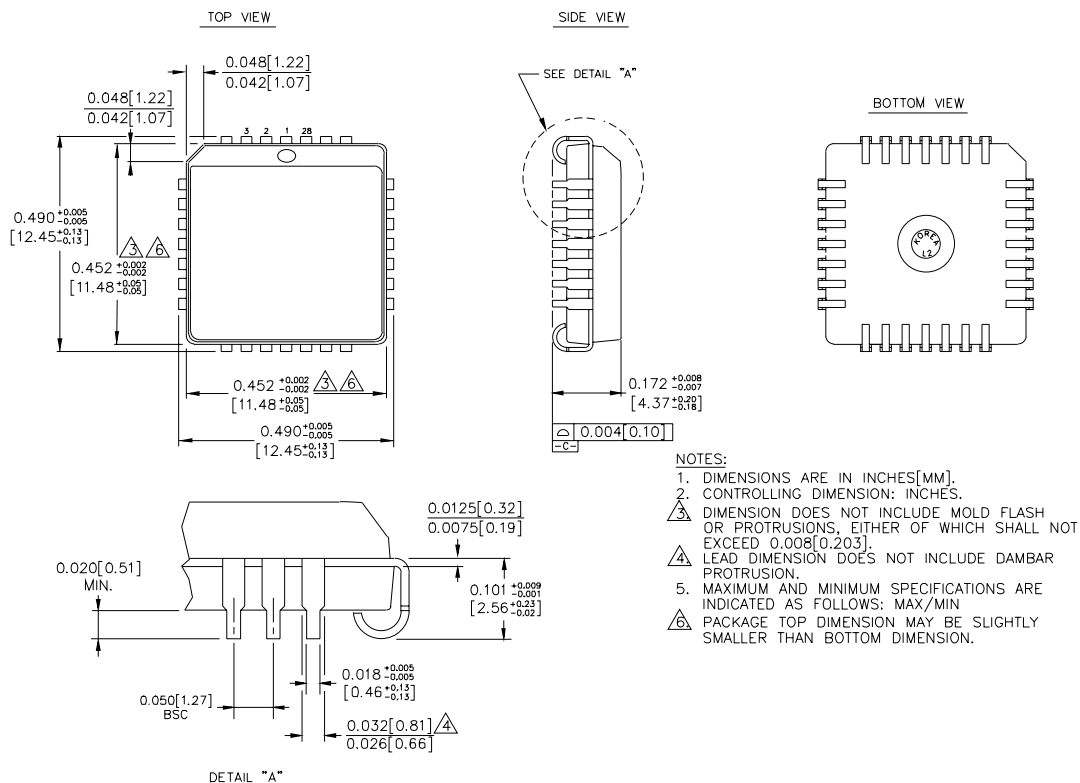
$V_{EE} = V_{EE}(\text{Min.})$ to $V_{EE}(\text{Max.})$; $V_{CC} = V_{CCO} = \text{GND}$

Symbol	Parameter	$T_A = -40^\circ\text{C}$			$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
t_{PD}	Propagation Delay to Output D to Q	150	—	550	200	350	500	200	350	500	200	350	500	ps
t_{skew}	Within-Device Skew ⁽¹⁾	—	50	—	—	50	—	—	50	—	—	50	—	ps
	Within-Gate Skew ⁽²⁾	—	25	—	—	25	—	—	25	—	—	25	—	ps
t_r t_f	Rise/Fall Time 20% to 80%	275	—	625	300	380	575	300	380	575	300	380	575	ps

Notes:

1. Within-device skew is defined as identical transitions on similar paths through a device.
2. Within-gate skew is defined as the variation in propagation delays through a single gate when driven from its different inputs.
3. Specification for packaged product only.

28-PIN PLCC (J28-1)



Rev. 03

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