

## FEATURES

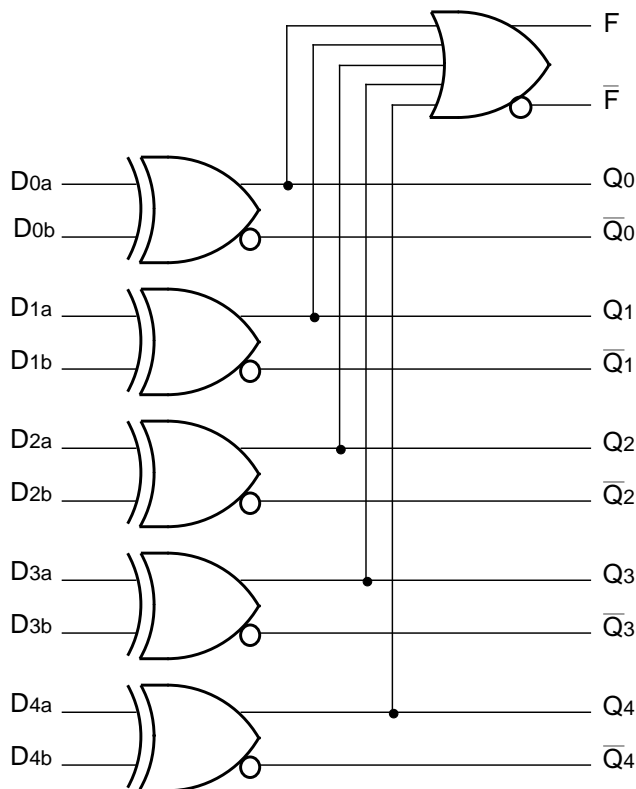
- 600ps max. propagation delay
- Extended 100E VEE range of -4.2V to -5.5V
- True and complementary outputs
- OR/NOR function outputs
- Fully compatible with Industry standard 10KH, 100K I/O levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E107
- Available in 28-pin PLCC package

## DESCRIPTION

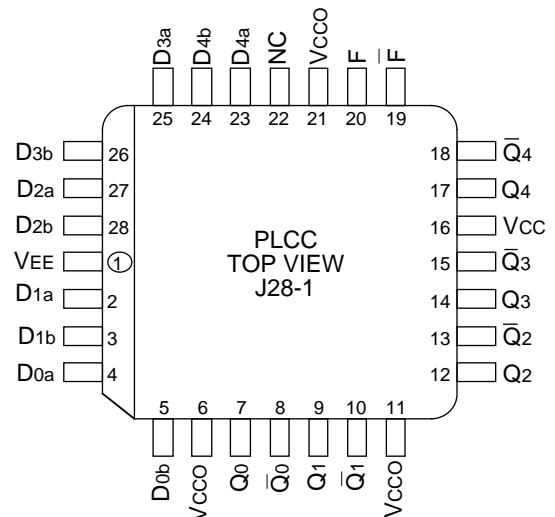
The SY10/100E107 offer five 2-input XOR/XNOR gates and are designed for use in new, high- performance ECL systems.

The E107 also features a function output, F, which is the OR of all five XOR gate outputs, while  $\bar{F}$  is the NOR. Both true and complementary outputs are provided.

## BLOCK DIAGRAM



## PIN CONFIGURATION



## PIN NAMES

Pin	Function
Dna, Dnb	Data Inputs
Q0-Q4	XOR Outputs
$\bar{Q}0-\bar{Q}4$	XNOR Outputs
F	OR Output
$\bar{F}$	NOR Output
Vcco	Vcc to Output

**LOGIC EQUATION**

$$F = (D0a \oplus D0b) + (D1a \oplus D1b) + (D2a \oplus D2b) + (D3a \oplus D3b) + (D4a \oplus D4b)$$

$$F = Q0 + Q1 + Q2 + Q3 + Q4$$

**DC ELECTRICAL CHARACTERISTICS**

V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

Symbol	Parameter	T <sub>A</sub> = 0°C			T <sub>A</sub> = +25°C			T <sub>A</sub> = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
I <sub>IH</sub>	Input HIGH Current	—	—	200	—	—	200	—	—	200	μA	—
I <sub>EE</sub>	Power Supply Current	—	42	50	—	42	50	—	42	50	mA	—
	10E 100E	—	42	50	—	42	50	—	48	58		

**AC ELECTRICAL CHARACTERISTICS**

V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

Symbol	Parameter	T <sub>A</sub> = 0°C			T <sub>A</sub> = +25°C			T <sub>A</sub> = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay to Output D to Q D to F	250 500	410 725	600 1000	250 500	410 725	600 1000	250 500	410 725	600 1000	ps	—
t <sub>skew</sub>	Within-Device Skew, D to Q	—	75	—	—	75	—	—	75	—	ps	1
t <sub>r</sub> t <sub>f</sub>	Rise/Fall Time 20% to 80% Q F	275 300	450 475	700 700	275 300	450 475	700 700	275 300	450 475	700 700	ps	—

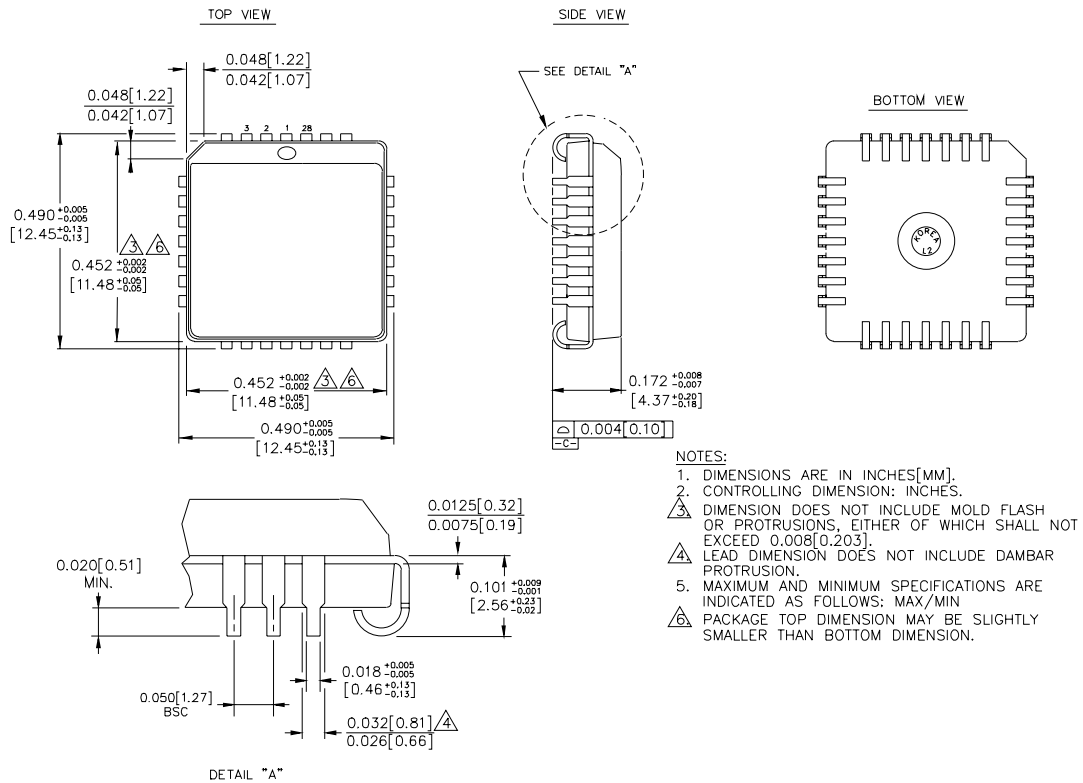
**NOTE:**

1. Within-device skew is defined as identical transitions on similar paths through a device.

**PRODUCT ORDERING CODE**

Ordering Code	Package Type	Operating Range
SY10E107JC	J28-1	Commercial
SY10E107JCTR	J28-1	Commercial
SY100E107JC	J28-1	Commercial
SY100E107JCTR	J28-1	Commercial

## 28 LEAD PLCC (J28-1)



Rev. 03

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**MICREL-SYNERGY 3250 SCOTT BOULEVARD SANTA CLARA CA 95054 USA**

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