

**FEATURES**

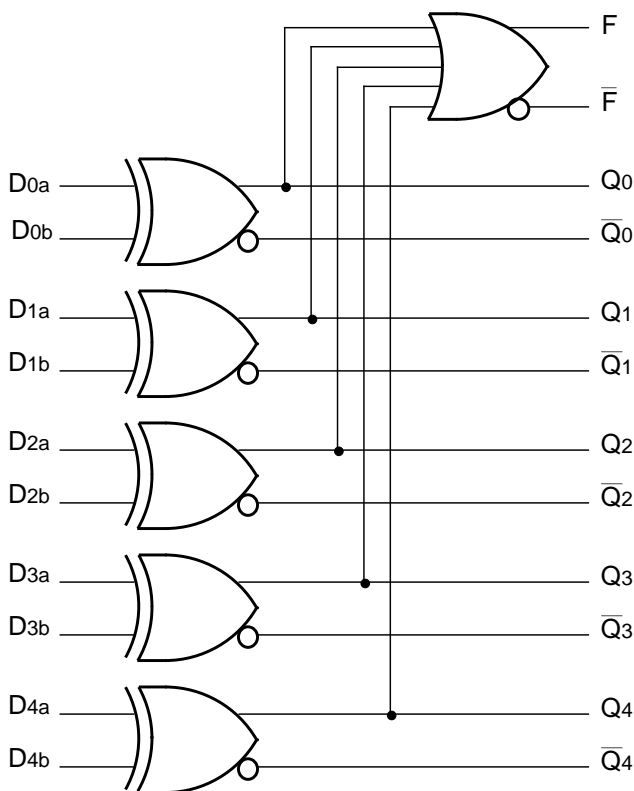
- 600ps max. propagation delay
- Extended 100E VEE range of -4.2V to -5.5V
- True and complementary outputs
- OR/NOR function outputs
- Fully compatible with Industry standard 10KH, 100K I/O levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E107
- Available in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

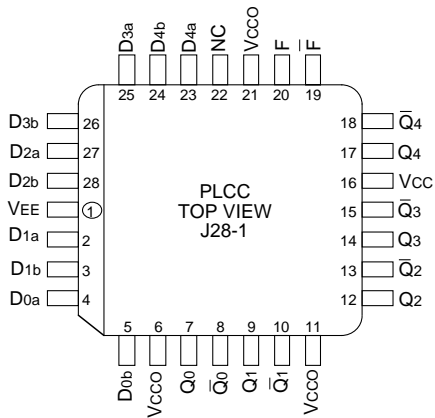
**BLOCK DIAGRAM**



**PIN 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

**PACKAGE/ORDERING INFORMATION**



**28-Pin PLCC (J28-1)**

**Ordering Information<sup>(1)</sup>**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E107JC	J28-1	Commercial	SY10E107JC	Sn-Pb
SY10E107JCTR <sup>(2)</sup>	J28-1	Commercial	SY10E107JC	Sn-Pb
SY100E107JC	J28-1	Commercial	SY100E107JC	Sn-Pb
SY100E107JCTR <sup>(2)</sup>	J28-1	Commercial	SY100E107JC	Sn-Pb
SY10E107JZ <sup>(3)</sup>	J28-1	Commercial	SY10E107JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E107JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY10E107JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E107JZ <sup>(3)</sup>	J28-1	Commercial	SY100E107JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E107JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY100E107JZ with Pb-Free bar-line indicator	Matte-Sn

**Notes:**

1. Contact factory for die availability. Dice are guaranteed at T<sub>A</sub> = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

**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**

$V_{EE} = V_{EE} (\text{Min.})$  to  $V_{EE} (\text{Max.})$ ;  $V_{CC} = V_{CC0} = \text{GND}$

Symbol	Parameter	$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit	Condition	
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.			
$I_{IH}$	Input HIGH Current	—	—	200	—	—	200	—	—	200	$\mu\text{A}$	—	
$I_{EE}$	Power Supply Current										mA	—	
		10E	—	42	50	—	42	50	—	42			50
		100E	—	42	50	—	42	50	—	48			58

**AC ELECTRICAL CHARACTERISTICS**

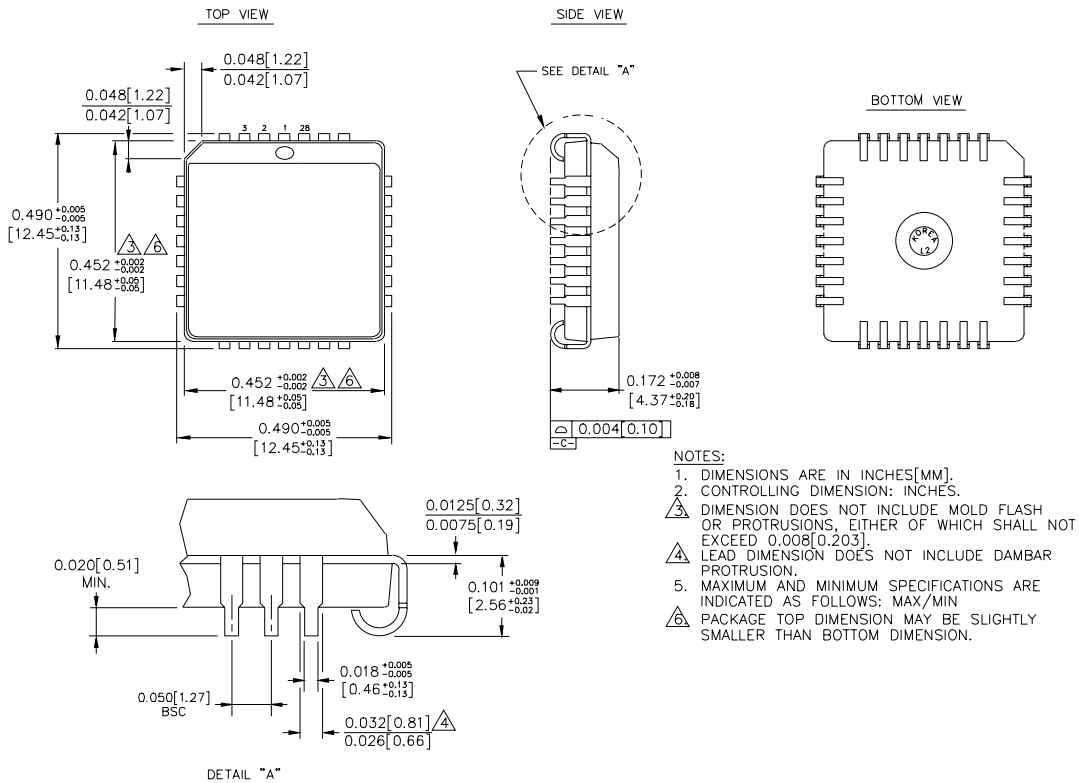
$V_{EE} = V_{EE} (\text{Min.})$  to  $V_{EE} (\text{Max.})$ ;  $V_{CC} = V_{CC0} = \text{GND}$

Symbol	Parameter	$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit	Condition	
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.			
$t_{PD}$	Propagation Delay to Output D to Q D to F	250	410	600	250	410	600	250	410	600	ps	—	
		500	725	1000	500	725	1000	500	725	1000			
$t_{skew}$	Within-Device Skew, D to Q	—	75	—	—	75	—	—	75	—	ps	1	
$t_r$ $t_f$	Rise/Fall Time 20% to 80%	Q	275	450	700	275	450	700	275	450	700	ps	—
		F	300	475	700	300	475	700	300	475	700		

**Note:**

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

**28-PIN PLCC (J28-1)**



Rev. 03

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