

FEATURES

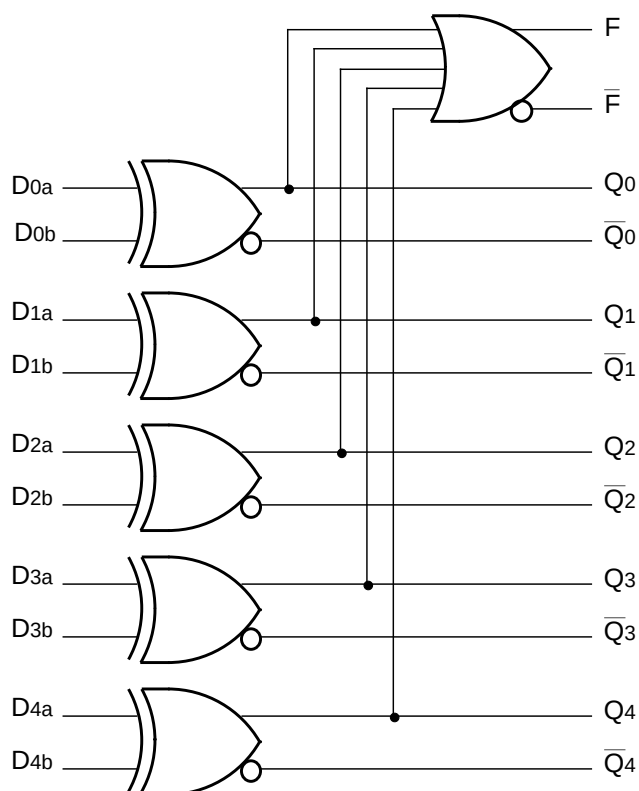
- 600ps max. propagation delay
- Extended 100E VEE range of -4.2V to -5.5V
- True and complementary outputs
- OR/NOR function outputs
- Fully compatible with Industry standard 10KH, 100K I/O levels
- Internal 75K Ω input pulldown resistors
- Fully compatible with Motorola MC10E/100E107
- Available in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

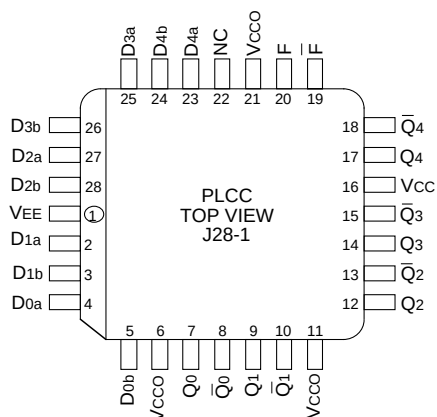
BLOCK DIAGRAM



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

Ordering Information⁽¹⁾

28-Pin PLCC (J28-1)

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

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

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

DC ELECTRICAL CHARACTERISTICS

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

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	μA	—
I_{EE}	Power Supply Current	—	42	50	—	42	50	—	42	50	mA	—
		10E	—	42	50	—	42	50	—	42		
		100E	—	42	50	—	42	50	—	48	58	

AC ELECTRICAL CHARACTERISTICS

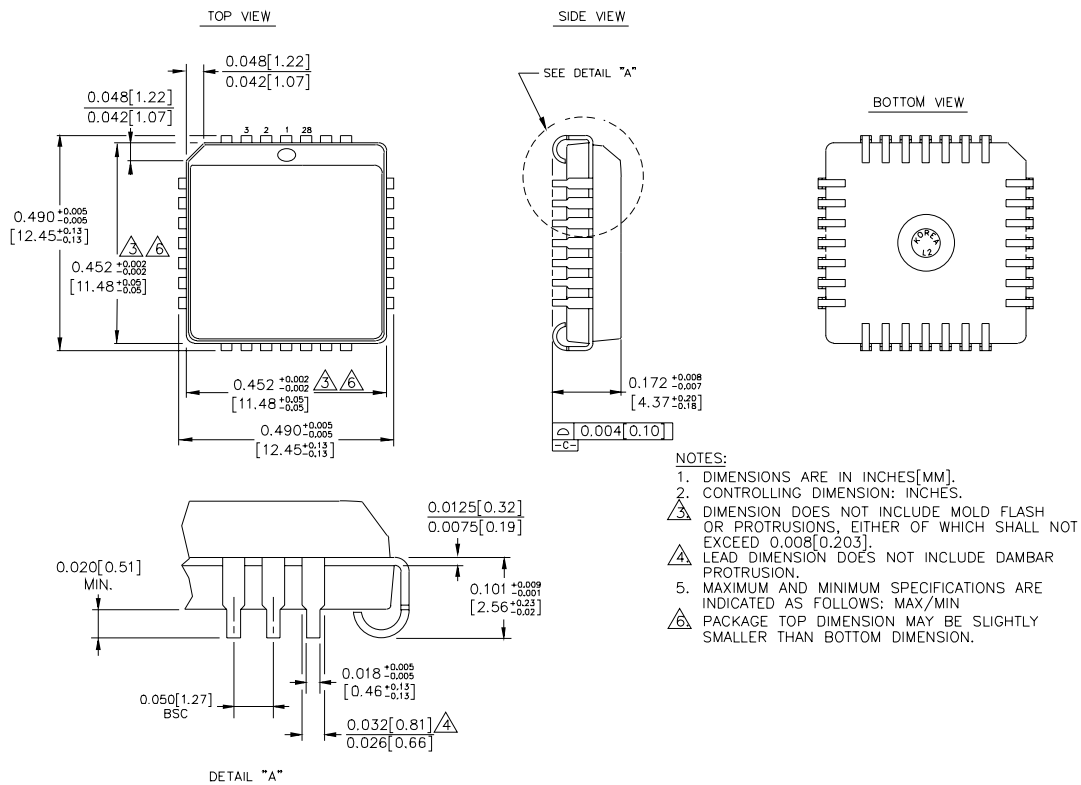
$V_{EE} = V_{EE} (\text{Min.})$ to $V_{EE} (\text{Max.})$; $V_{CC} = V_{CCO} = \text{GND}$

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	250 500	410 725	600 1000	250 500	410 725	600 1000	250 500	410 725	600 1000	ps	—
t_{skew}	Within-Device Skew, D to Q	—	75	—	—	75	—	—	75	—	ps	1
t_r t_f	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.

28-PIN PLCC (J28-1)



Rev. 03

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