



QUINT 2-INPUT XOR/XNOR GATE

SY10E107
SY100E107

FEATURES

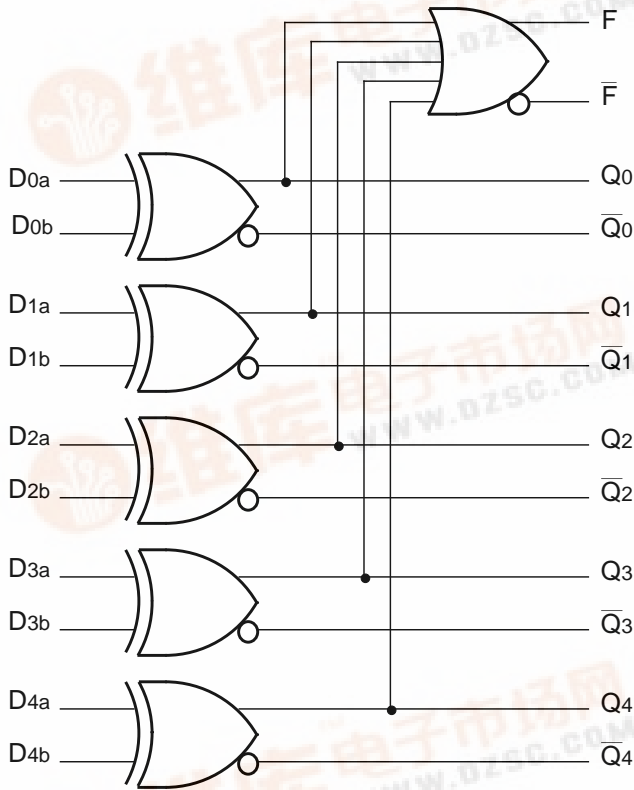
- 600ps max. propagation delay
- Extended 100E VEE range of -4.2V to -5.5V
- True and complementary outputs
- OR/NOR function outputs
- Fully compatible with Industry standard 10KH, 100K I/O levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E107
- Available in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

DESCRIPTION

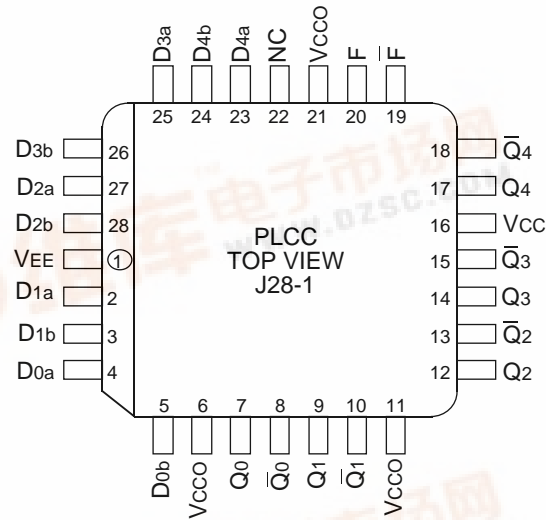
The SY10/100E107 offer five 2-input XOR/XNOR gates and are designed for use in new, high- performance ECL systems.

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
Vcc0	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

$V_{EE} = V_{EE} (\text{Min.})$ 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	μA	—	
I _{EE}	Power Supply Current	—	42	50	—	42	50	—	42	50	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 _{PLH} t _{PHL}	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
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	—

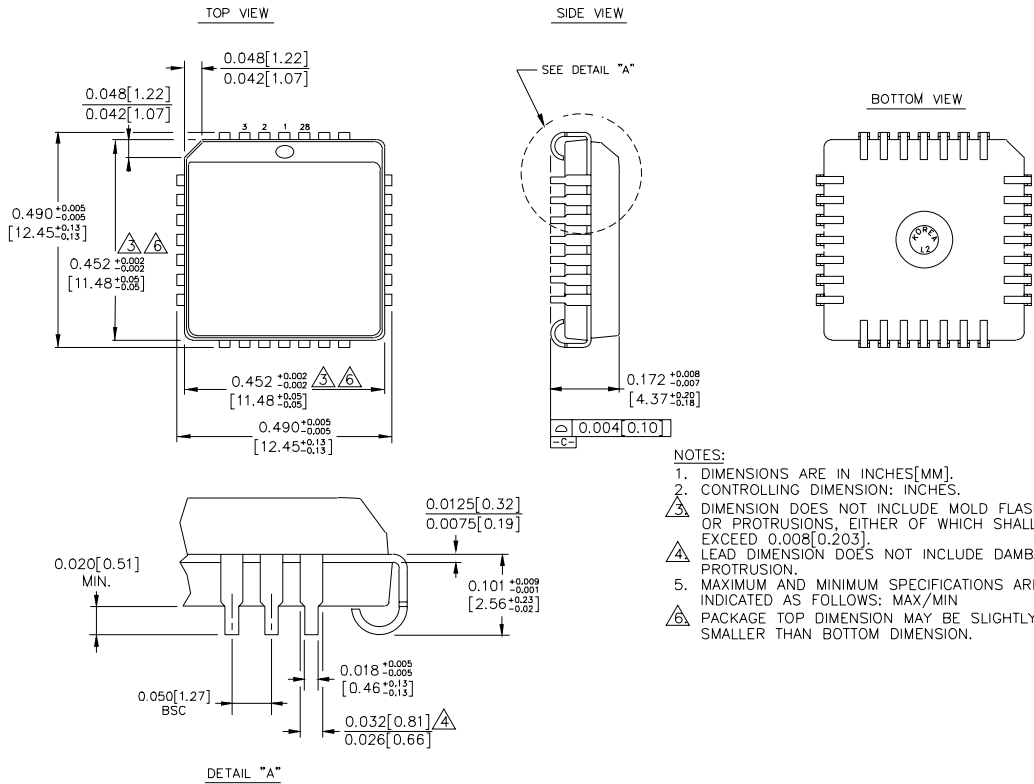
NOTE:

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

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)



- NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
 2. CONTROLLING DIMENSION: INCHES.
 3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008[0.203].
 4. LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.
 5. MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN
 6. PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

MICREL-SYNERGY 3250 SCOTT BOULEVARD SANTA CLARA CA 95054 USA

TEL + 1 (408) 980-9191 FAX + 1 (408) 914-7878 WEB <http://www.micrel.com>

This information is believed to be accurate and reliable, however no responsibility is assumed by Micrel for its use nor for any infringement of patents or other rights of third parties resulting from its use. No license is granted by implication or otherwise under any patent or patent right of Micrel Inc.

© 2000 Micrel Incorporated