

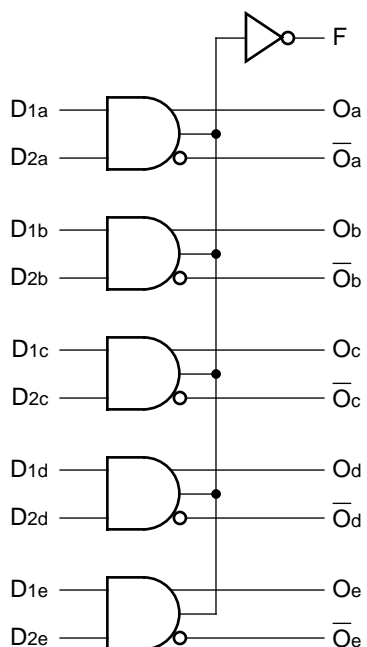
FEATURES

- Max. propagation delay of 1050ps
- IEE min. of -60mA
- Extended supply voltage option:
VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75kΩ input pull-down resistors
- 40% faster than Fairchild 300K at lower power
- Function and pinout compatible with Fairchild F100K
- Available in 28-pin PLCC package

DESCRIPTION

The SY100S304 is an ultra-fast quint AND/NAND gate designed for use in high-performance ECL systems. This device also features a Function (F) output which is the wire-NOR of the AND gate outputs. The inputs on the device have 75kΩ pull-down resistors.

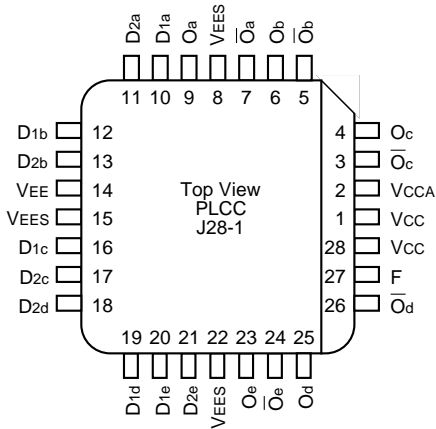
BLOCK DIAGRAM



PIN NAMES

Pin	Function
Dna – Dne	Data Inputs (n-1...5)
E	Enable Input
Oa – Oe	Data Outputs
$\bar{O}a - \bar{O}e$	Complementary Data Outputs
VEES	VEE Substrate
VCCA	VCCO for ECL Outputs

PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)

Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S304JC	J28-1	Commercial	SY100S304JC	Sn-Pb
SY100S304JCTR ⁽¹⁾	J28-1	Commercial	SY100S304JC	Sn-Pb
SY100S304JZ ⁽²⁾	J28-1	Commercial	SY100S304JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S304JZTR ^(1, 2)	J28-1	Commercial	SY100S304JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Tape and Reel.
2. Pb-Free package is recommended for new designs.

DC ELECTRICAL CHARACTERISTICS

V_{EE} = -4.2V to -5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

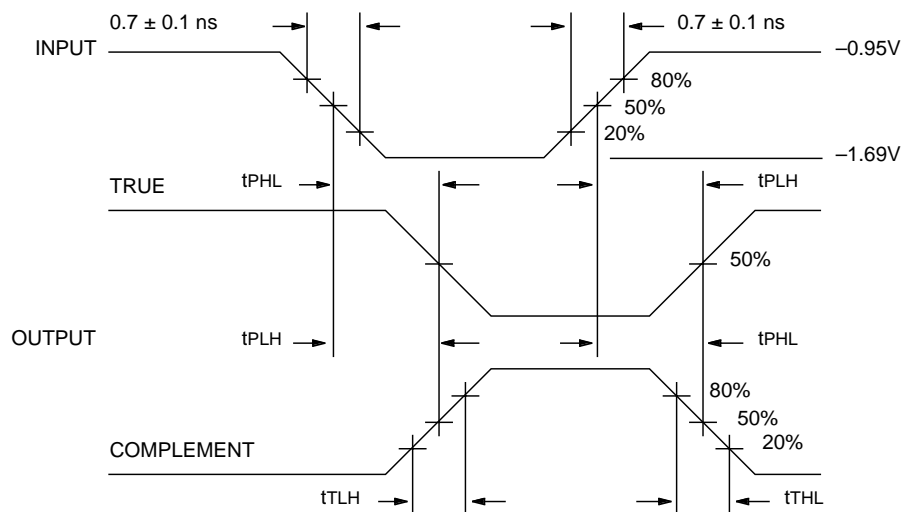
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I _{IH}	Input HIGH Current D2a — D2e D1a — D1e	—	—	250 250	μA	V _{IN} = V _{IH} (Max.)
I _{EE}	Power Supply Current	-60	-40	-30	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

V_{EE} = -4.2V to -5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

Symbol	Parameter	T _A = 0°C		T _A = +25°C		T _A = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
t _{PLH} t _{PHL}	Propagation Delay D _{na} — D _{ne} to O, \bar{O}	300	1050	300	1050	300	1050	ps	
t _{PLH} t _{PHL}	Propagation Delay Data to F	600	1550	600	1550	600	1550	ps	
t _{TLH} t _{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

TIMING DIAGRAM

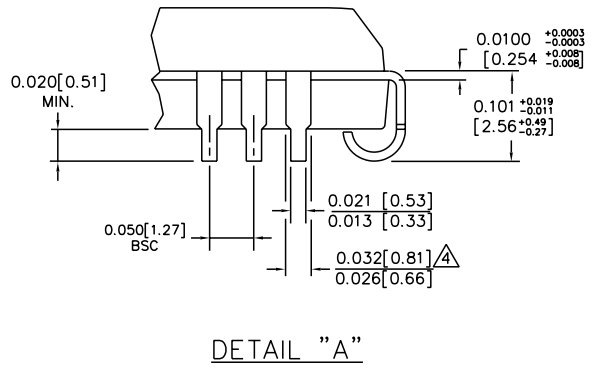
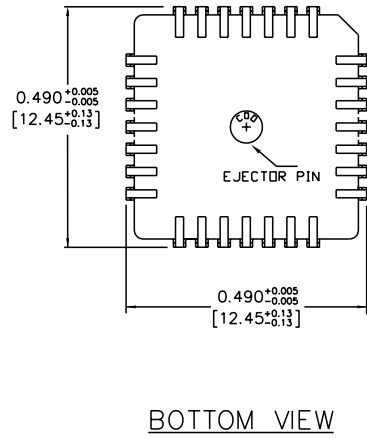
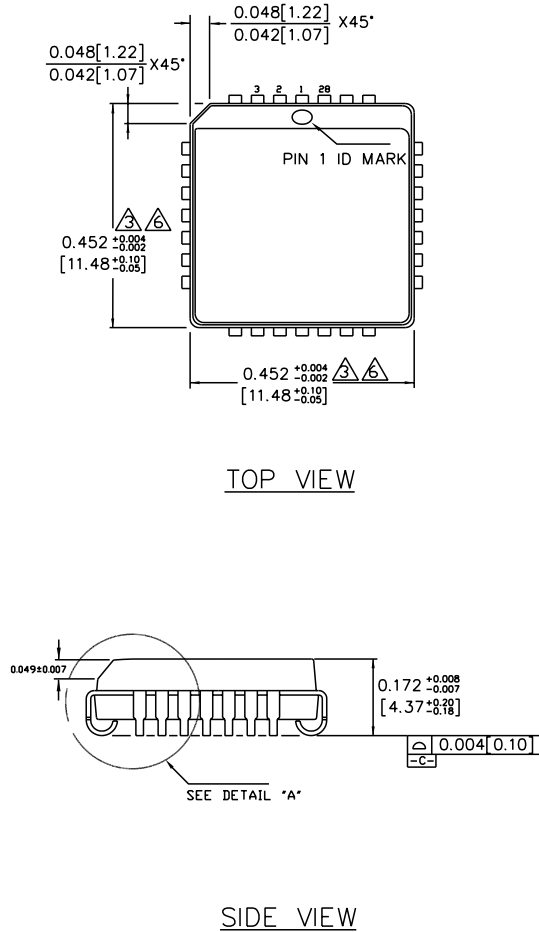


Propagation Delay and Transition Times

NOTE:

V_{EE} = -4.2V to -5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

28-PIN 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.

Rev. A

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