



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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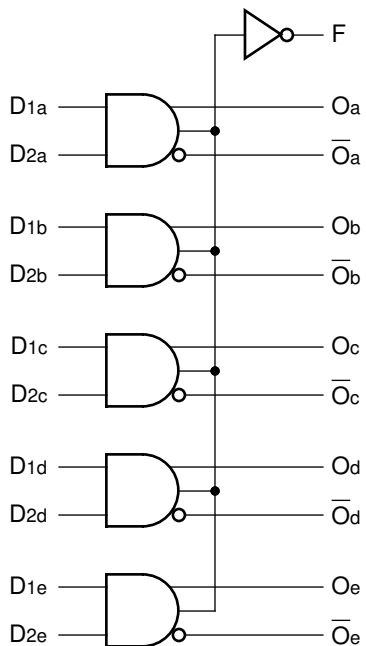
FEATURES

- 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.

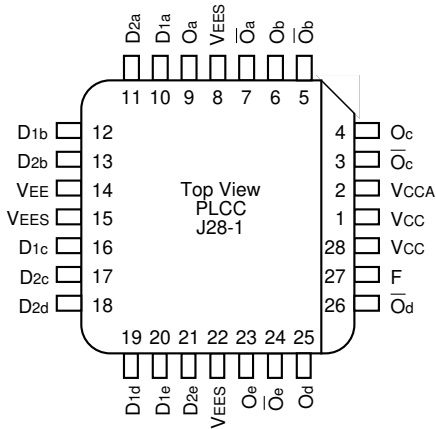
BLOCK DIAGRAM



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

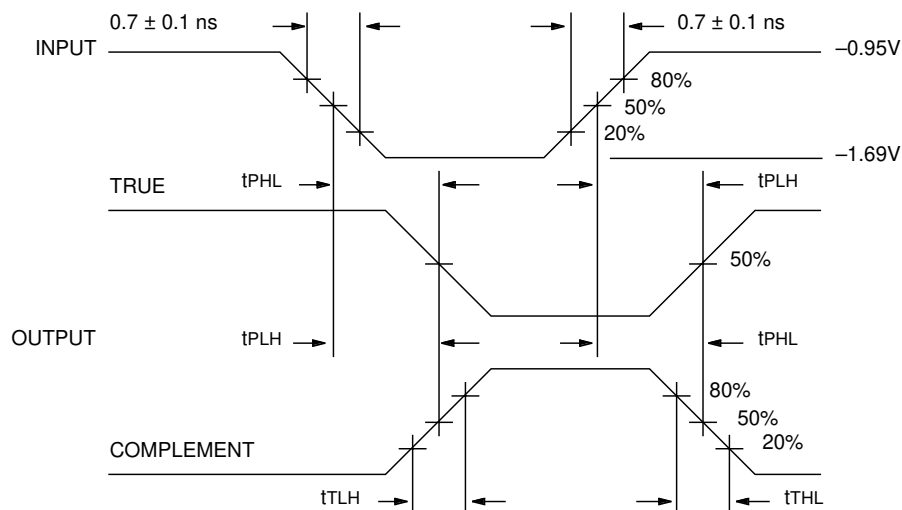
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I _{IH}	Input HIGH Current D2a — D2e D1a — D1e	—	—	250 250	μA	V _{IN} = V _{IH} (Max.)
I _{EE}	Power Supply Current	-60	-40	-30	mA	Inputs Open

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

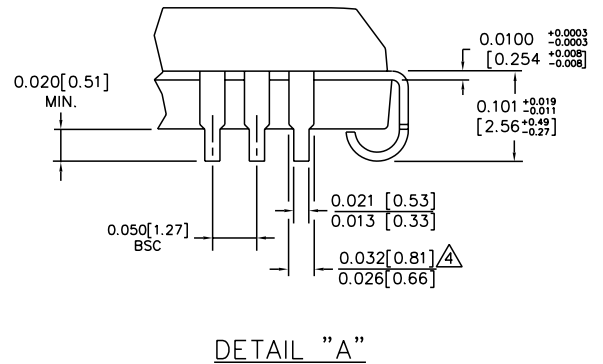
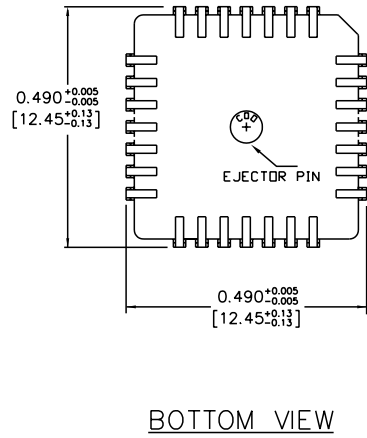
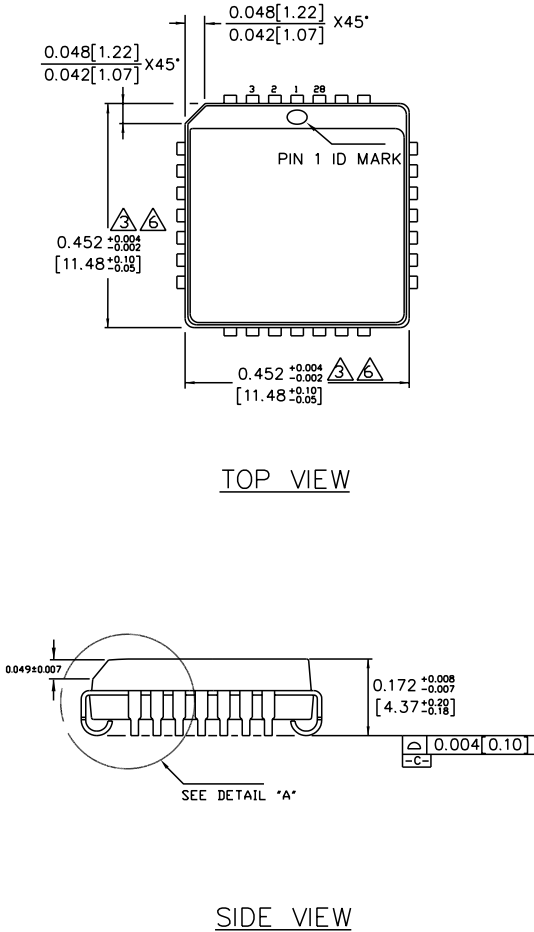


Propagation Delay and Transition Times

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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