

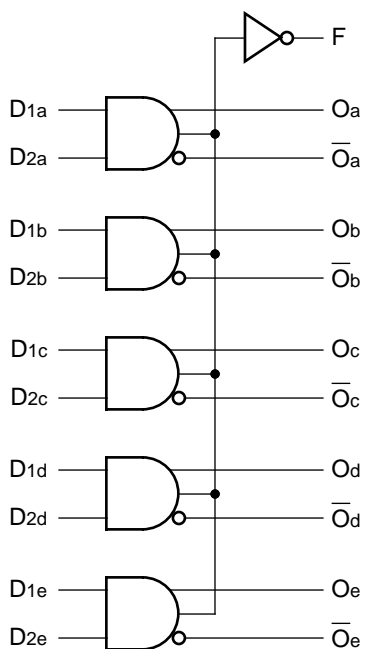
FEATURES

- 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 24-pin CERPACK and 28-pin PLCC packages

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.

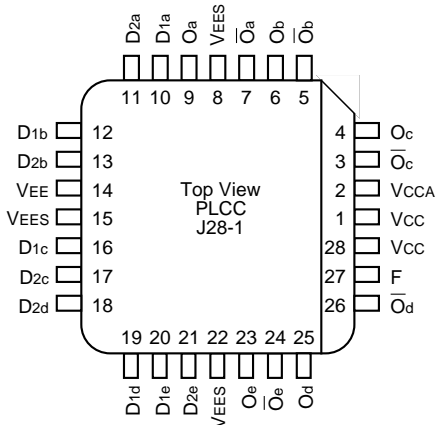
BLOCK DIAGRAM



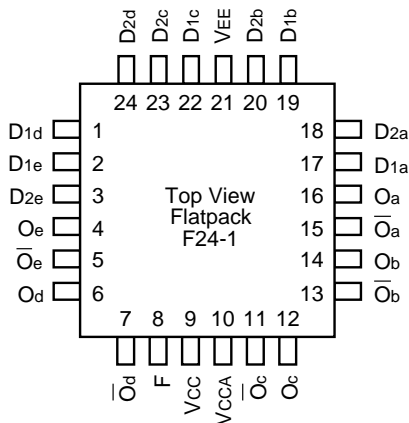
PIN NAMES

Pin	Function
Dna – Dne	Data Inputs (n-1...5)
E	Enable Input
Oa – Oe	Data Outputs
O-bara – O-bare	Complementary Data Outputs
VEES	VEE Substrate
VCCA	VCCO for ECL Outputs

PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)



24-Pin Cerpack (F24-1)

Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S304FC	F24-1	Commercial	SY100S304FC	Sn-Pb
SY100S304FCTR ⁽¹⁾	F24-1	Commercial	SY100S304FC	Sn-Pb
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**CERPACK**

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

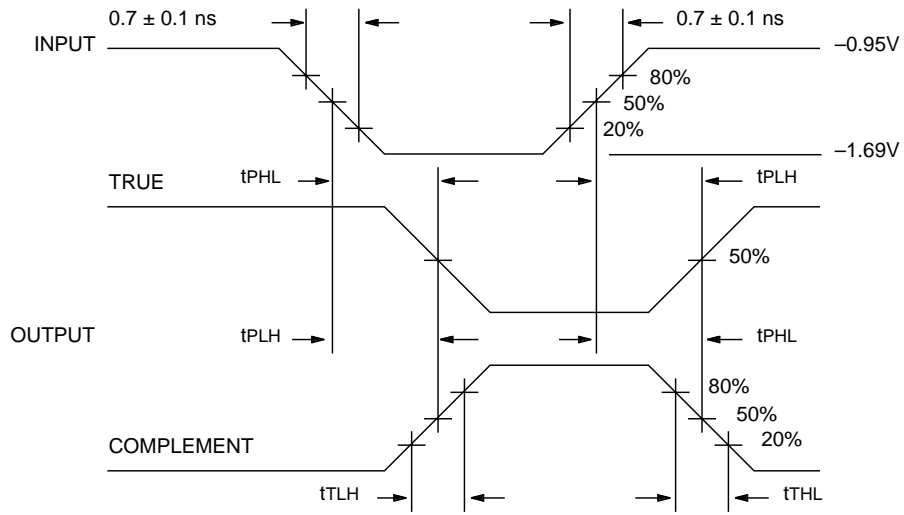
Symbol	Parameter	$T_A = 0^{\circ}C$		$T_A = +25^{\circ}C$		$T_A = +85^{\circ}C$		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay Dna — Dne to O, \bar{O}	300	1150	300	1150	300	1150	ps	
t_{PLH} t_{PHL}	Propagation Delay Data to F	600	1650	600	1650	600	1650	ps	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

PLCC

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

Symbol	Parameter	$T_A = 0^{\circ}C$		$T_A = +25^{\circ}C$		$T_A = +85^{\circ}C$		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay Dna — Dne 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

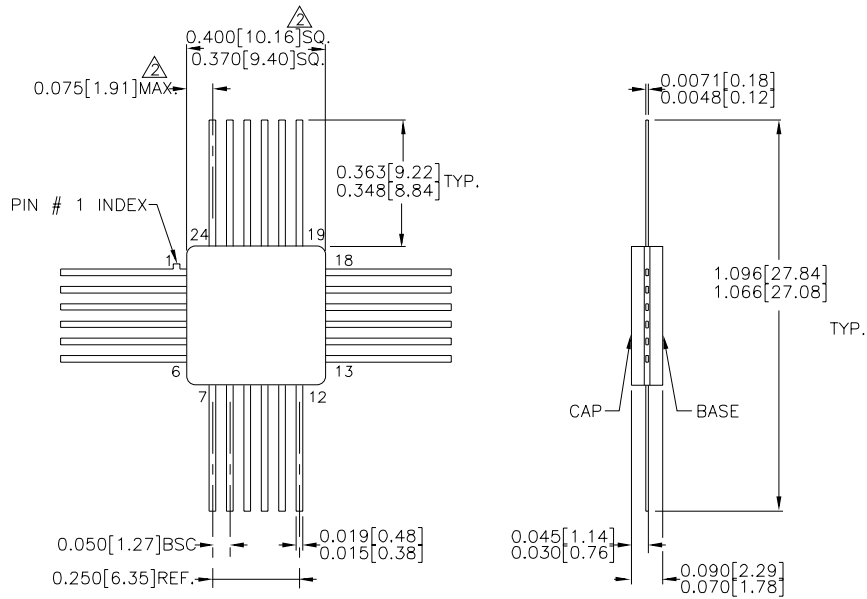


Propagation Delay and Transition Times

NOTE:

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

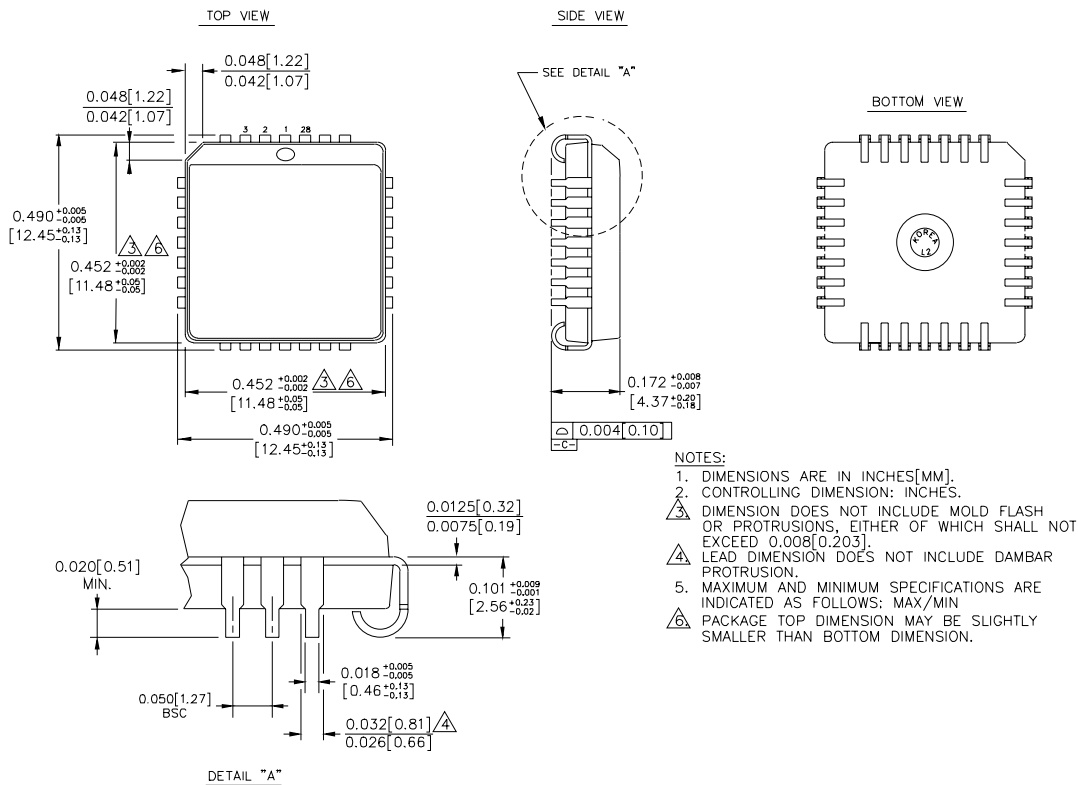
24-PIN CERPACK (F24-1)



- NOTES:**
1. DIMENSIONS ARE IN INCHES[MM].
 2. THIS DIMENSION INCLUDES GLASS PROTRUSION AND CAP TO BASE ALIGNMENT TOLERANCES.
 3. DIMENSIONS SHOWN ARE MAX/MIN, WHERE NOTED.

Rev. 03

28-PIN PLCC (J28-1)



Rev. 03

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