

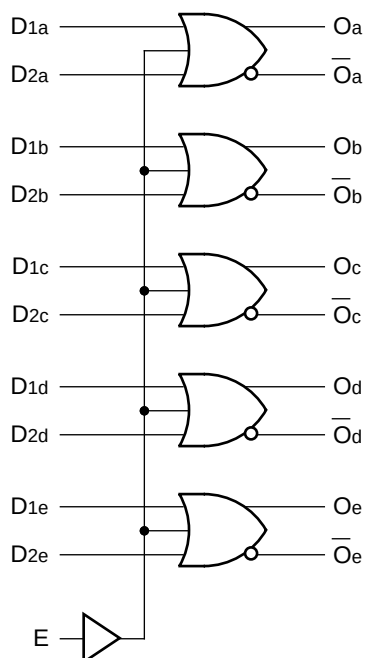
FEATURES

- Max. propagation delay of 700ps
- IEE min. of -45mA
- Industry standard 100K ECL levels
- Extended supply voltage option:
VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75kΩ input pull-down resistors
- 50% faster than Fairchild 300K
- Function and pinout compatible with Fairchild F100K
- Available in 28-pin PLCC package

DESCRIPTION

The SY100S302 offers five 2-input OR/NOR gates designed for use in high-performance ECL systems. The five gates are controlled by a common Enable signal. All inputs have 75kΩ pull-down resistors and all outputs are buffered.

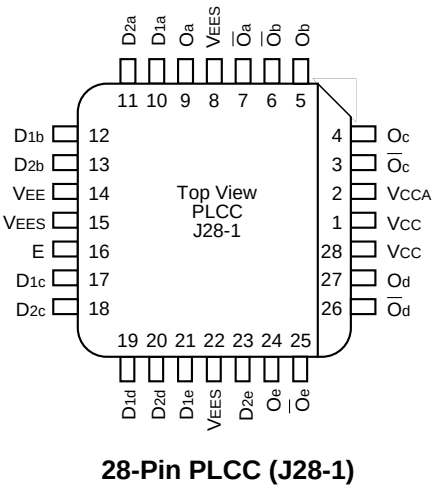
BLOCK DIAGRAM



PIN NAMES

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

PACKAGE/ORDERING INFORMATION



Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S302JC	J28-1	Commercial	SY100S302JC	Sn-Pb
SY100S302JCTR ⁽¹⁾	J28-1	Commercial	SY100S302JC	Sn-Pb
SY100S302JZ ⁽²⁾	J28-1	Commercial	SY100S302JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S302JZTR ^(1, 2)	J28-1	Commercial	SY100S302JZ with Pb-Free bar-line indicator	Matte-Sn

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

TRUTH TABLE⁽¹⁾

D1X	D2X	E	OX	$\overline{OX}$
L	L	L	L	H
L	L	H	H	L
L	H	L	H	L
L	H	H	H	L
H	L	L	H	L
H	L	H	H	L
H	H	L	H	L
H	H	H	H	L

- Note:
1. H = High Voltage Level
L = Low Voltage Level

DC ELECTRICAL CHARACTERISTICS

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

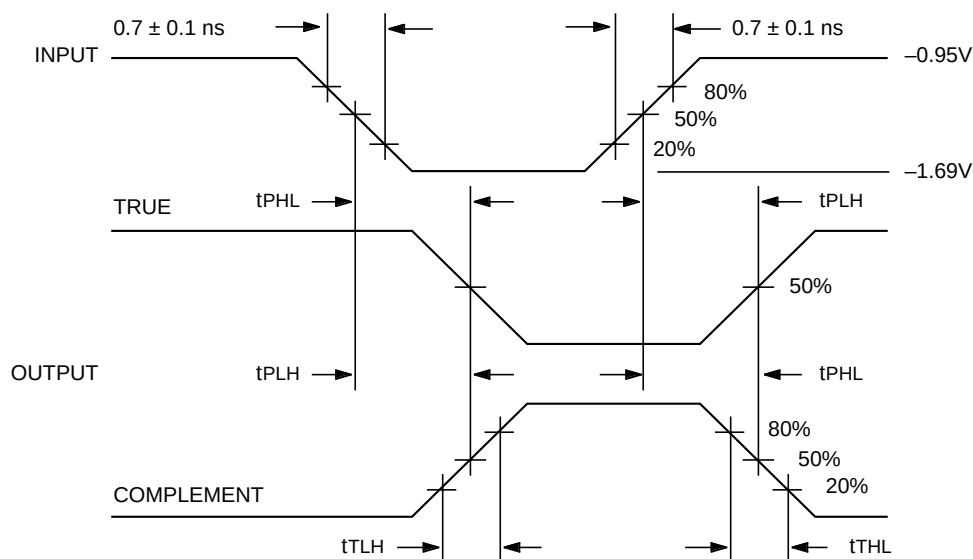
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I_{IH}	Input HIGH Current, All Inputs	—	—	200	μA	$V_{IN} = V_{IH} (Max.)$
I_{EE}	Power Supply Current	-45	-28	-21	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

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

Symbol	Parameter	$T_A = 0^{\circ}C$		$T_A = +25^{\circ}C$		$T_A = +85^{\circ}C$		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay Data to Output	250	700	250	700	250	700	ps	
t_{PLH} t_{PHL}	Propagation Delay Enable to Output	250	900	250	900	250	900	ps	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

TIMING DIAGRAM

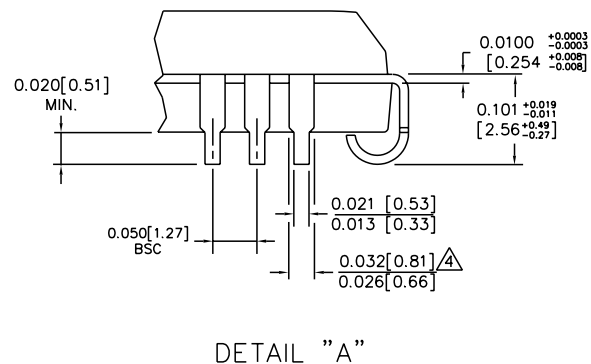
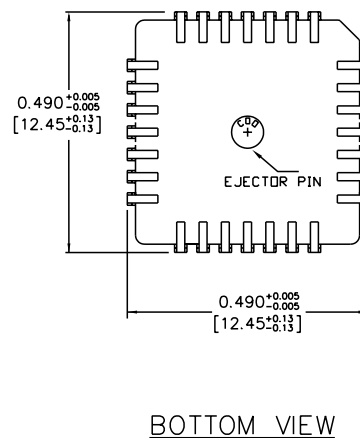
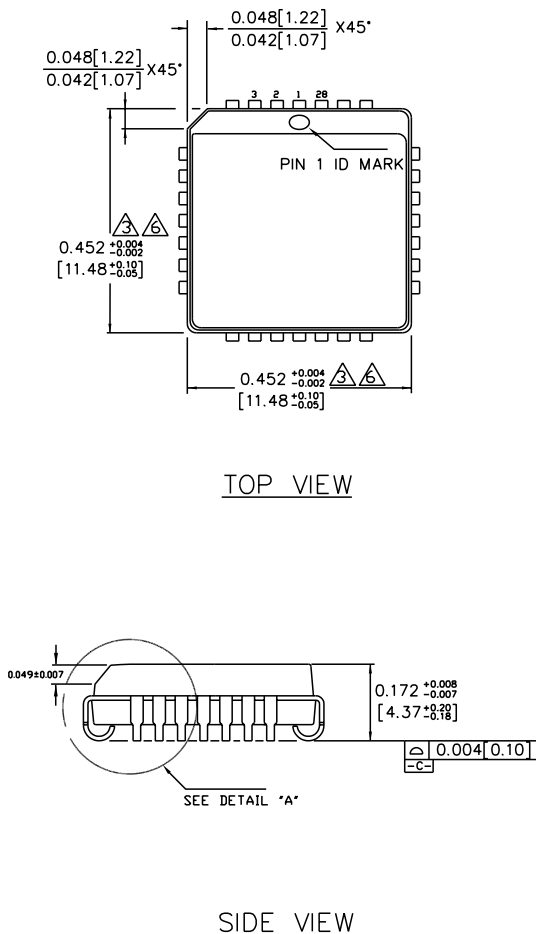


Propagation Delay and Transition Times

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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