

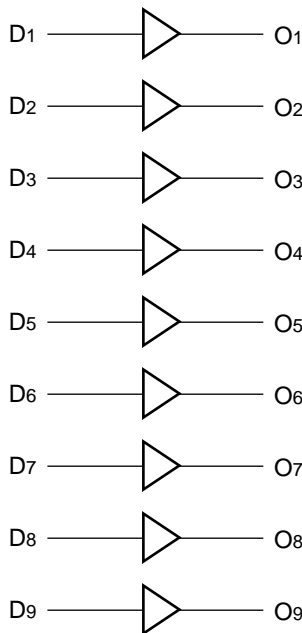
FEATURES

- Max. propagation delay of 700ps
- IEE min. of -55mA
- Extended supply voltage option:
VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- Internal 75kΩ input pull-down resistors
- 70% faster than Fairchild 300K at lower power
- Function and pinout compatible with Fairchild F100K
- Available in 28-pin PLCC package

DESCRIPTION

The SY100S322 is an ultra-fast buffer designed for use in high-performance ECL systems. The device provides nine non-inverting buffers with single-ended outputs. The inputs on the device have 75kΩ pull-down resistors.

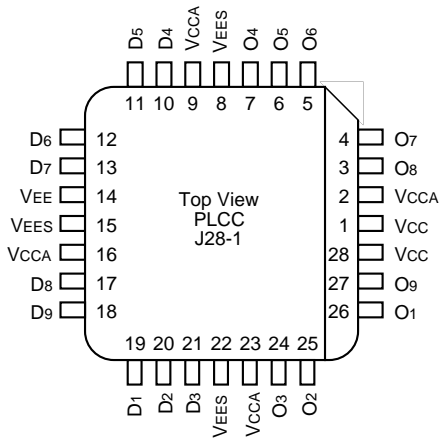
BLOCK DIAGRAM



PIN NAMES

| Pin | Function |
|---------|----------------------|
| D1 – D9 | Data Inputs |
| O1 – O9 | 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 |
|---------------------------------|--------------|-----------------|---|-------------|
| SY100S322JC | J28-1 | Commercial | SY100S322JC | Sn-Pb |
| SY100S322JCTR ⁽¹⁾ | J28-1 | Commercial | SY100S322JC | Sn-Pb |
| SY100S322JZ ⁽²⁾ | J28-1 | Commercial | SY100S322JZ with Pb-Free bar-line indicator | Matte-Sn |
| SY100S322JZTR ^(1, 2) | J28-1 | Commercial | SY100S322JZ with Pb-Free bar-line indicator | Matte-Sn |

Notes:

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

LOGIC EQUATION

$O_n = D_n, n = 1 \text{ to } 9$

DC ELECTRICAL CHARACTERISTICS

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

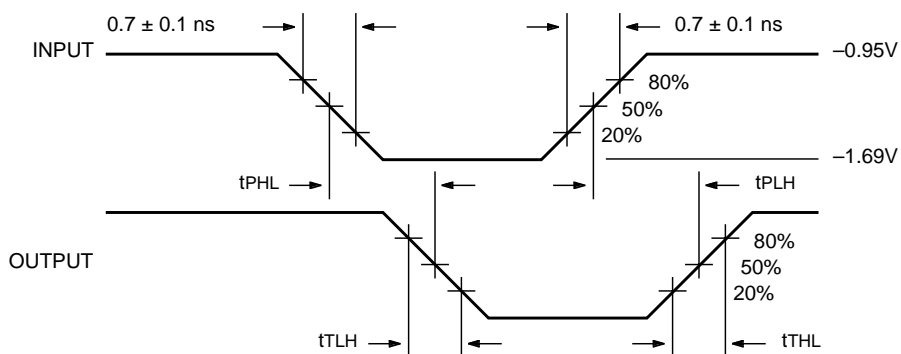
| Symbol | Parameter | Min. | Typ. | Max. | Unit | Condition |
|----------|----------------------|------|------|------|---------|----------------------------------|
| I_{IH} | Input HIGH Current | — | — | 200 | μA | $V_{IN} = V_{IH} \text{ (Max.)}$ |
| I_{EE} | Power Supply Current | -55 | -41 | -25 | mA | Inputs Open |

AC ELECTRICAL CHARACTERISTICS

$V_{EE} = -4.2V \text{ to } -5.5V$ 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 | 300 | 700 | 300 | 700 | 300 | 700 | ps | |
| t_{TLH} t_{THL} | Transition Time 20% to 80%, 80% to 20% | 300 | 900 | 300 | 900 | 300 | 900 | ps | |

TIMING DIAGRAM

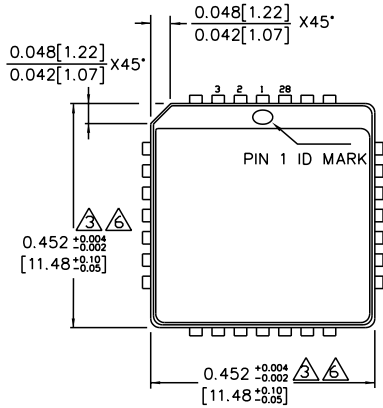


Propagation Delay and Transition Times

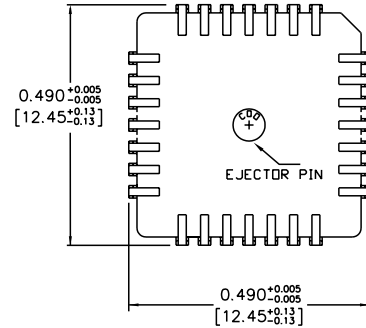
Note:

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

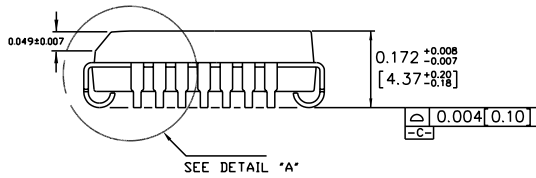
28-PIN PLCC (J28-1)



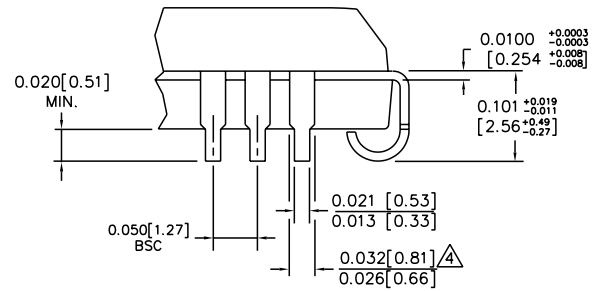
TOP VIEW



BOTTOM VIEW



SIDE VIEW



DETAIL "A"

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

MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB <http://www.micrel.com>

The information furnished by Micrel in this data sheet is believed to be accurate and reliable. However, no responsibility is assumed by Micrel for its use. Micrel reserves the right to change circuitry and specifications at any time without notification to the customer.

Micrel Products are not designed or authorized for use as components in life support appliances, devices or systems where malfunction of a product can reasonably be expected to result in personal injury. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform can be reasonably expected to result in a significant injury to the user. A Purchaser's use or sale of Micrel Products for use in life support appliances, devices or systems is at Purchaser's own risk and Purchaser agrees to fully indemnify Micrel for any damages resulting from such use or sale.

© 2006 Micrel, Incorporated.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

[SY100S322JZ](#) [SY100S322JZ-TR](#)