

## FEATURES

750ps max. LEN to output  
Extended 100E VEE range of -4.2V to -5.5V  
700ps max. D to output  
Single-ended outputs  
Asynchronous Master Reset  
Dual latch-enables  
Fully compatible with industry standard 10KH,  
100K ECL levels  
Internal 75KΩ input pulldown resistors  
Fully compatible with Motorola MC10E/100E155  
Available in 28-pin PLCC package

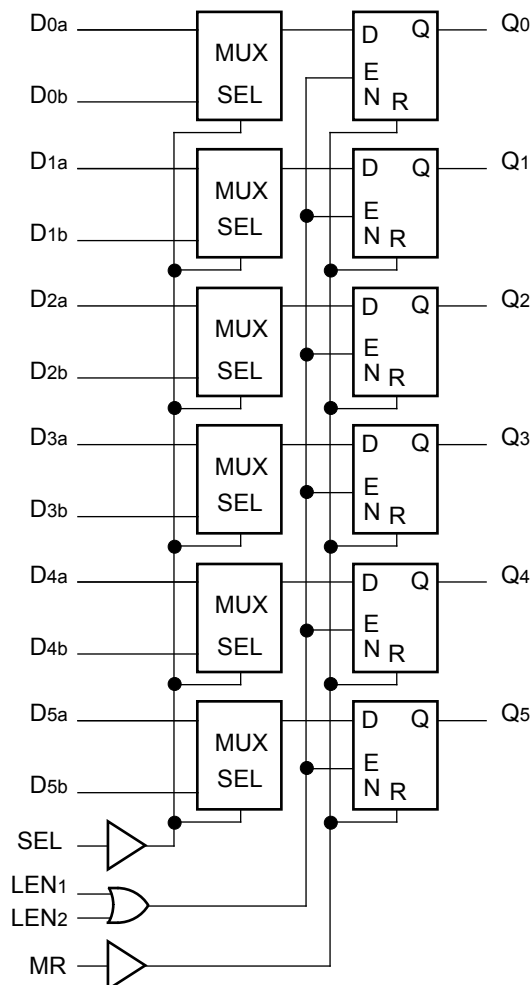
## DESCRIPTION

The SY10/100E155 offer six 2:1 multiplexers followed by latches with single-ended outputs, designed for use in new, high-performance ECL systems. The two external latch-enable signals (LEN<sub>1</sub> and LEN<sub>2</sub>) are gated through a logical OR operation before use as control for the six latches. When both LEN<sub>1</sub> and LEN<sub>2</sub> are at a logic LOW, the latches are transparent, thus presenting the data from the multiplexers at the output pins. If either LEN<sub>1</sub> or LEN<sub>2</sub> (or both) are at a logic HIGH, the outputs are latched.

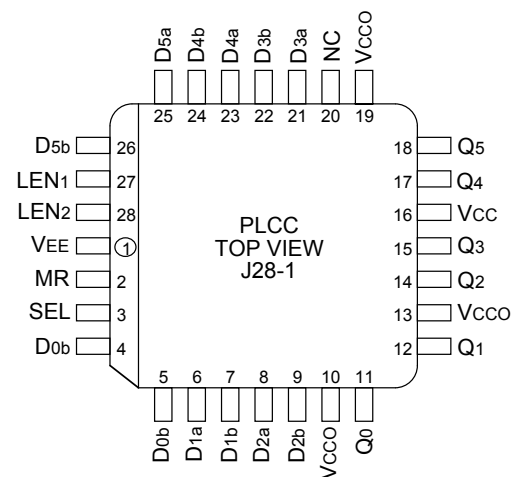
The multiplexer operation is controlled by the SEL (Select) signal which selects one of the two bits of input data at each mux to be passed through.

The MR (Master Reset) signal operates asynchronously to take all outputs to a logic LOW.

## BLOCK DIAGRAM



## PIN CONFIGURATION



## PIN NAMES

| Pin        | Function          |
|------------|-------------------|
| D0a-D5a    | Input Data a      |
| D0b-D5b    | Input Data b      |
| SEL        | Data Select Input |
| LEN1, LEN2 | Latch Enables     |
| MR         | Master Reset      |
| Q0-Q5      | Outputs           |
| VCCO       | Vcc to Output     |

## TRUTH TABLES

| SEL | Data |
|-----|------|
| H   | a    |
| L   | b    |

| LEN1 | LEN2 | Latch       |
|------|------|-------------|
| L    | L    | Transparent |
| H    | X    | Latched     |
| X    | H    | Latched     |

## DC ELECTRICAL CHARACTERISTICS

V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

| Symbol          | Parameter            | T <sub>A</sub> = 0°C |      |      | T <sub>A</sub> = +25°C |      |      | T <sub>A</sub> = +85°C |      |      | Unit | Condition |
|-----------------|----------------------|----------------------|------|------|------------------------|------|------|------------------------|------|------|------|-----------|
|                 |                      | Min.                 | Typ. | Max. | Min.                   | Typ. | Max. | Min.                   | Typ. | Max. |      |           |
| I <sub>IH</sub> | Input HIGH Current   | —                    | —    | 150  | —                      | —    | 150  | —                      | —    | 150  | μA   | —         |
| I <sub>EE</sub> | Power Supply Current | —                    | —    | —    | —                      | —    | —    | —                      | —    | —    | mA   | —         |
|                 |                      | 10E                  | 85   | 102  | 85                     | 102  | 85   | 85                     | 102  | 102  |      |           |
|                 |                      | 100E                 | 85   | 102  | 85                     | 102  | 85   | 98                     | 117  | 117  |      |           |

## AC ELECTRICAL CHARACTERISTICS

V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

| Symbol                               | Parameter                                            | T <sub>A</sub> = 0°C     |                          |                          | T <sub>A</sub> = +25°C   |                          |                          | T <sub>A</sub> = +85°C   |                          |                          | Unit | Condition |
|--------------------------------------|------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|-----------|
|                                      |                                                      | Min.                     | Typ.                     | Max.                     | Min.                     | Typ.                     | Max.                     | Min.                     | Typ.                     | Max.                     |      |           |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay to Output<br>D<br>SEL<br>LEN<br>MR | 325<br>475<br>350<br>450 | 500<br>675<br>500<br>600 | 700<br>925<br>750<br>850 | 325<br>475<br>350<br>450 | 500<br>675<br>500<br>600 | 700<br>925<br>750<br>850 | 325<br>475<br>350<br>450 | 500<br>675<br>500<br>600 | 700<br>925<br>750<br>850 | ps   | —         |
| t <sub>s</sub>                       | Set-up Time<br>D<br>SEL                              | 300<br>500               | 100<br>250               | —<br>—                   | 300<br>500               | 100<br>250               | —<br>—                   | 300<br>500               | 100<br>250               | —<br>—                   | ps   | —         |
| t <sub>h</sub>                       | Hold Time<br>D<br>SEL                                | 300<br>0                 | −100<br>−250             | —<br>—                   | 300<br>0                 | −100<br>−250             | —<br>—                   | 300<br>0                 | −100<br>−250             | —<br>—                   | ps   | —         |
| t <sub>RR</sub>                      | Reset Recovery Time                                  | 800                      | 650                      | —                        | 800                      | 650                      | —                        | 800                      | 650                      | —                        | ps   | —         |
| t <sub>PW</sub>                      | Minimum Pulse Width, MR                              | 400                      | —                        | —                        | 400                      | —                        | —                        | 400                      | —                        | —                        | ps   | —         |
| t <sub>skew</sub>                    | Within-Device Skew                                   | —                        | 75                       | —                        | —                        | 75                       | —                        | —                        | 75                       | —                        | ps   | 1         |
| t <sub>r</sub><br>t <sub>f</sub>     | Rise/Fall Time<br>20% to 80%                         | 300                      | 450                      | 800                      | 300                      | 450                      | 800                      | 300                      | 450                      | 800                      | ps   | —         |

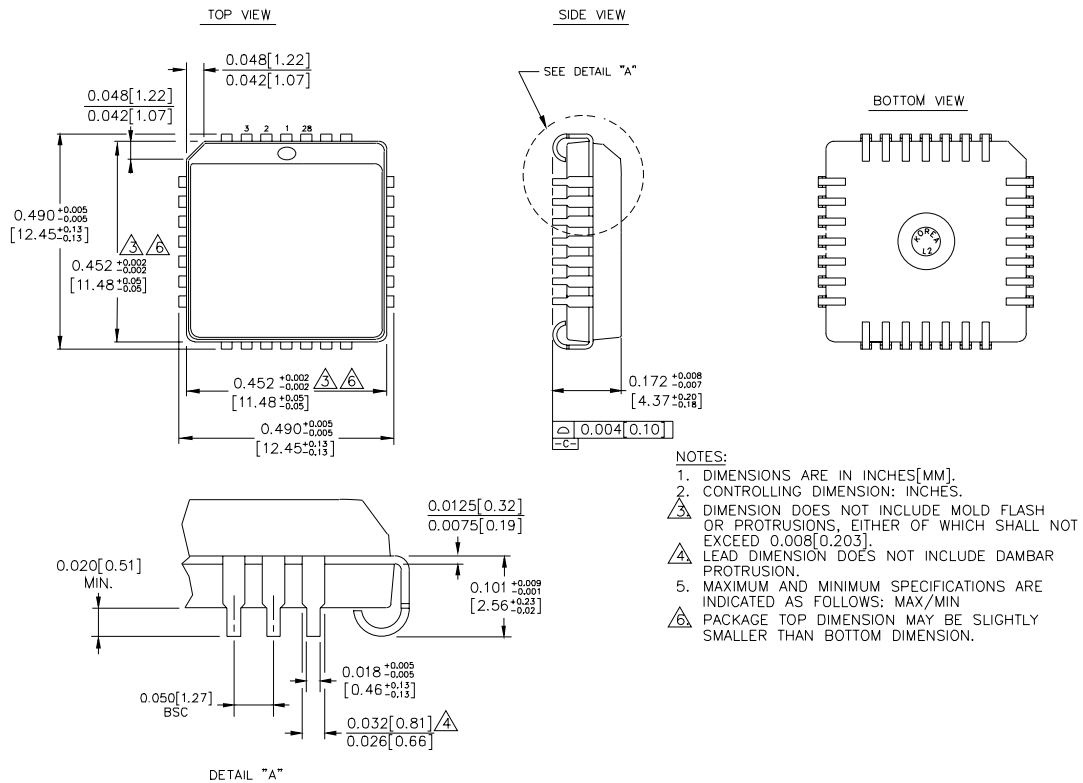
## NOTE:

1. Within-device skew is defined as identical transitions on similar paths through a device.

## PRODUCT ORDERING CODE

| Ordering Code | Package Type | Operating Range |
|---------------|--------------|-----------------|
| SY10E155JZ    | J28-1        | Commercial      |
| SY10E155JZTR  | J28-1        | Commercial      |
| SY100E155JZ   | J28-1        | Commercial      |
| SY100E155JZTR | J28-1        | Commercial      |

## 28 LEAD PLCC (J28-1)



Rev. 03

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