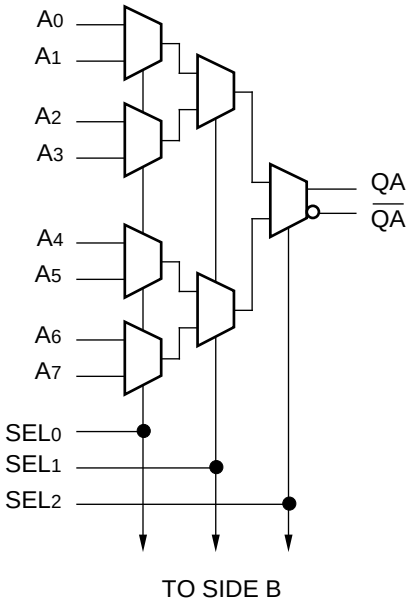
## FEATURES

- **850ps max. propagation delay**
- **Extended 100E $V_{EE}$ range of –4.2V to –5.5V**
- **Differential outputs**
- **Internal 75KΩ input pulldown resistors**
- **Fully compatible with industry standard 10KH, 100K ECL levels**
- **Fully compatible with Motorola MC10E/100E163**
- **Available in 28-pin PLCC package**

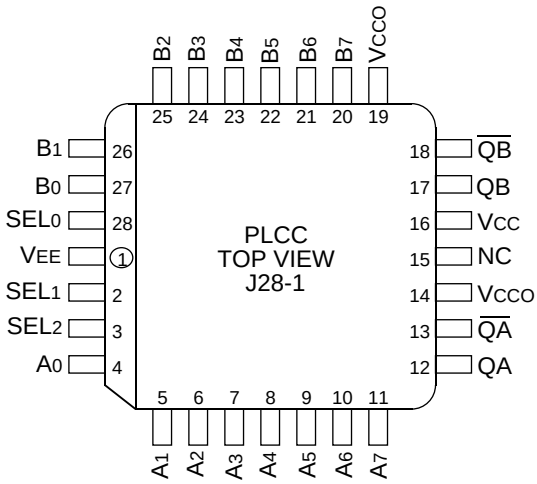
## DESCRIPTION

The SY10/100E163 offer two 8:1 multiplexers designed for use in new, high-performance ECL systems. The E163 has differential outputs and common select inputs. The select inputs ($SEL_0$, $SEL_1$, $SEL_2$) determine which one of the eight data inputs ($A_0$–$A_7$, $B_0$–$B_7$) is propagated to the output.

## BLOCK DIAGRAM




## PIN CONFIGURATION




## PIN NAMES

| Pin | Function |
|---|---|
| $A_0$–$A_7$ | A Data Inputs (D) |
| $B_0$–$B_7$ | B Data Inputs (D) |
| $SEL_{0, 1, 2}$ | Select Inputs |
| QA, QB | True Outputs |
| $\overline{QA}$, $\overline{QB}$ | Inverting Outputs |
| $V_{CCO}$ | $V_{CC}$ to Output |

## TRUTH TABLE

| $SEL_2$ | $SEL_1$ | $SEL_0$ | A/B Data |
|---|---|---|---|
| L | L | L | 0 |
| L | L | H | 1 |
| L | H | L | 2 |
| L | H | H | 3 |
| H | L | L | 4 |
| H | L | H | 5 |
| H | H | L | 6 |
| H | H | H | 7 |

## DC ELECTRICAL CHARACTERISTICS

$V_{EE}$ = $V_{EE}$ (Min.) to $V_{EE}$ (Max.); $V_{CC}$ = $V_{CCO}$ = GND

| Symbol | Parameter | $T_A$ = 0°C | | | $T_A$ = +25°C | | | $T_A$ = +85°C | | | Unit | Condition |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | | |
| $I_{IH}$ | Input HIGH Current | — | — | 150 | — | — | 150 | — | — | 150 | µA | — |
| $I_{EE}$ | Power Supply Current | | | | | | | | | | mA | — |
| | 10E | — | 73 | 88 | — | 73 | 88 | — | 73 | 88 | | |
| | 100E | — | 73 | 88 | — | 73 | 88 | — | 83 | 100 | | |

## AC ELECTRICAL CHARACTERISTICS

$V_{EE}$ = $V_{EE}$ (Min.) to $V_{EE}$ (Max.); $V_{CC}$ = $V_{CCO}$ = GND

| Symbol | Parameter | $T_A$ = 0°C | | | $T_A$ = +25°C | | | $T_A$ = +85°C | | | Unit | Condition |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | | |
| $t_{PLH}$ | Propagation Delay to Output | | | | | | | | | | ps | — |
| $t_{PHL}$ | D | 400 | 550 | 800 | 400 | 550 | 800 | 400 | 550 | 800 | | |
| | $SEL_0$ | 525 | 725 | 950 | 525 | 725 | 950 | 525 | 725 | 950 | | |
| | $SEL_1$ | 425 | 625 | 850 | 425 | 625 | 850 | 425 | 625 | 850 | | |
| | $SEL_2$ | 350 | 525 | 725 | 350 | 525 | 725 | 350 | 525 | 725 | | |
| $t_{skew}$ | Within-Device Skew | | | | | | | | | | ps | 1 |
| | $A_n$, $B_n$ to Q | — | 40 | — | — | 40 | — | — | 40 | — | | |
| | $A_n$, $A_m$ to QA | — | 30 | — | — | 30 | — | — | 30 | — | | |
| | $B_n$, $B_m$ to QB | — | 30 | — | — | 30 | — | — | 30 | — | | |
| $t_r$ | Rise/Fall Time | 275 | 375 | 575 | 275 | 375 | 575 | 275 | 375 | 575 | ps | — |
| $t_f$ | 20% to 80% | | | | | | | | | | | |

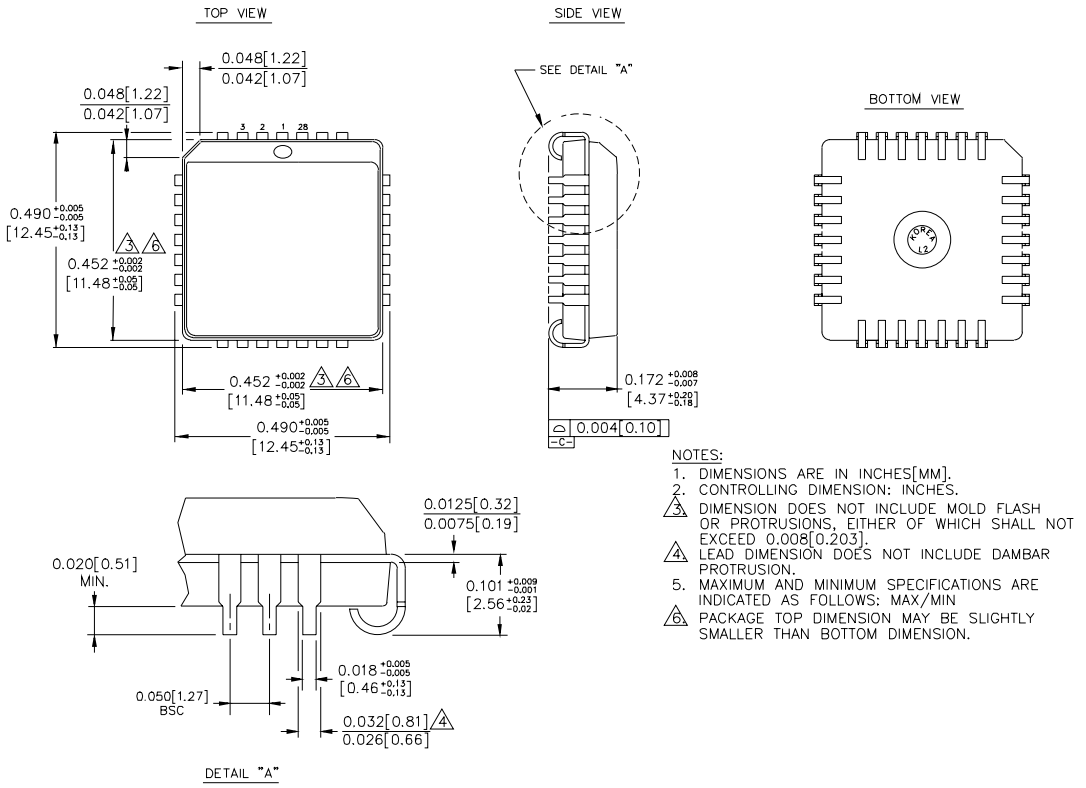
**NOTE:**

1. Within-device skew is defined as identical transition on similar paths through a device; n = 0-7, m ≠ n, m = 0-7.

## PRODUCT ORDERING CODE

| Ordering Code | Package Type | Operating Range |
|---|---|---|
| SY10E163JC | J28-1 | Commercial |
| SY10E163JCTR | J28-1 | Commercial |
| SY100E163JC | J28-1 | Commercial |
| SY100E163JCTR | J28-1 | Commercial |

## 28 LEAD 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.

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