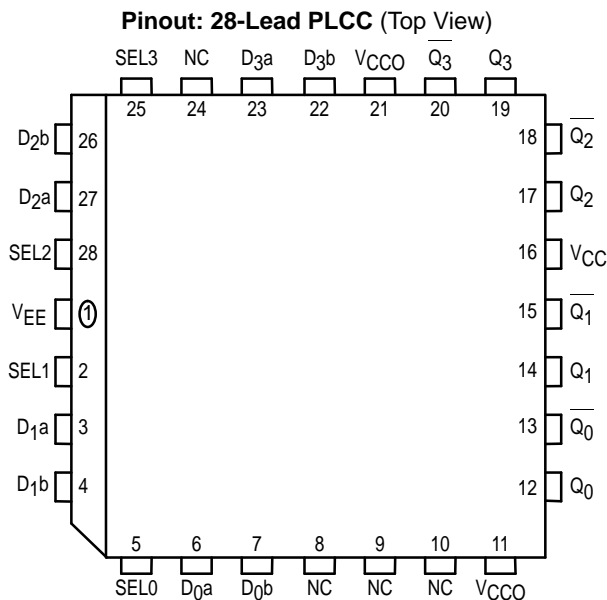


# Quad 2:1 Multiplexer

The MC10E/100E157 contains four 2:1 multiplexers with differential outputs. The output data are controlled by the individual Select (SEL) inputs. The individual select control makes the devices well suited for random logic designs.

- Individual Select Controls
- 550ps Max. D to Output
- 800ps Max. SEL to Output
- Extended 100E V<sub>EE</sub> Range of - 4.2V to - 5.46V
- Internal 75kΩ Input Pulldown Resistors



\* All V<sub>CC</sub> and V<sub>CCO</sub> pins are tied together on the die.

**PIN NAMES**

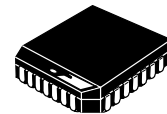
| Pin                                 | Function         |
|-------------------------------------|------------------|
| D <sub>0a</sub> – D <sub>3a</sub>   | Input Data a     |
| D <sub>0b</sub> – D <sub>3b</sub>   | Input Data b     |
| SEL <sub>0</sub> – SEL <sub>3</sub> | Select Inputs    |
| Q <sub>0</sub> – Q <sub>3</sub>     | True Outputs     |
| Q <sub>0</sub> – Q <sub>3</sub>     | Inverted Outputs |

**TRUTH TABLE**

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

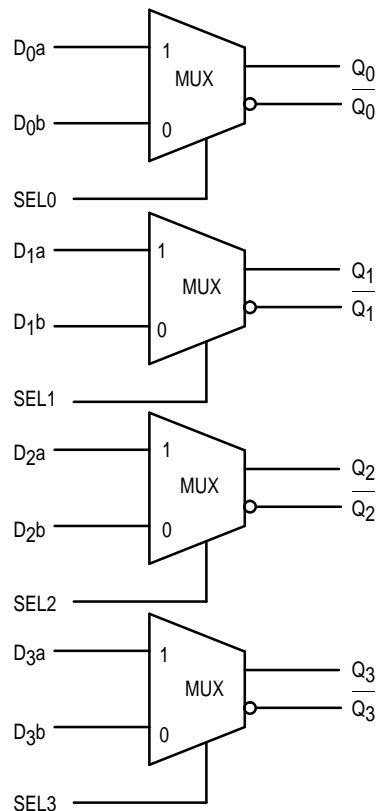
**MC10E157**  
**MC100E157**

**QUAD 2:1**  
**MULTIPLEXER**



**FN SUFFIX**  
PLASTIC PACKAGE  
CASE 776-02

**LOGIC DIAGRAM**



# MC10E157 MC100E157

## DC CHARACTERISTICS ( $V_{EE} = V_{EE}(\text{min})$ to $V_{EE}(\text{max})$ ; $V_{CC} = V_{CCO} = \text{GND}$ )

| Symbol   | Characteristic       | 0°C |     |     | 25°C |     |     | 85°C |     |     | Unit          | Condition |
|----------|----------------------|-----|-----|-----|------|-----|-----|------|-----|-----|---------------|-----------|
|          |                      | min | typ | max | min  | typ | max | min  | typ | max |               |           |
| $I_{IH}$ | Input HIGH Current   |     |     |     |      |     |     |      |     |     | $\mu\text{A}$ |           |
|          | D                    |     |     | 200 |      |     | 200 |      |     | 200 |               |           |
|          | SEL                  |     |     | 150 |      |     | 150 |      |     | 150 |               |           |
| $I_{EE}$ | Power Supply Current |     |     |     |      |     |     |      |     |     | mA            |           |
|          | 10E                  |     | 32  | 38  |      | 32  | 38  |      | 32  | 38  |               |           |
|          | 100E                 |     | 32  | 38  |      | 32  | 38  |      | 37  | 44  |               |           |

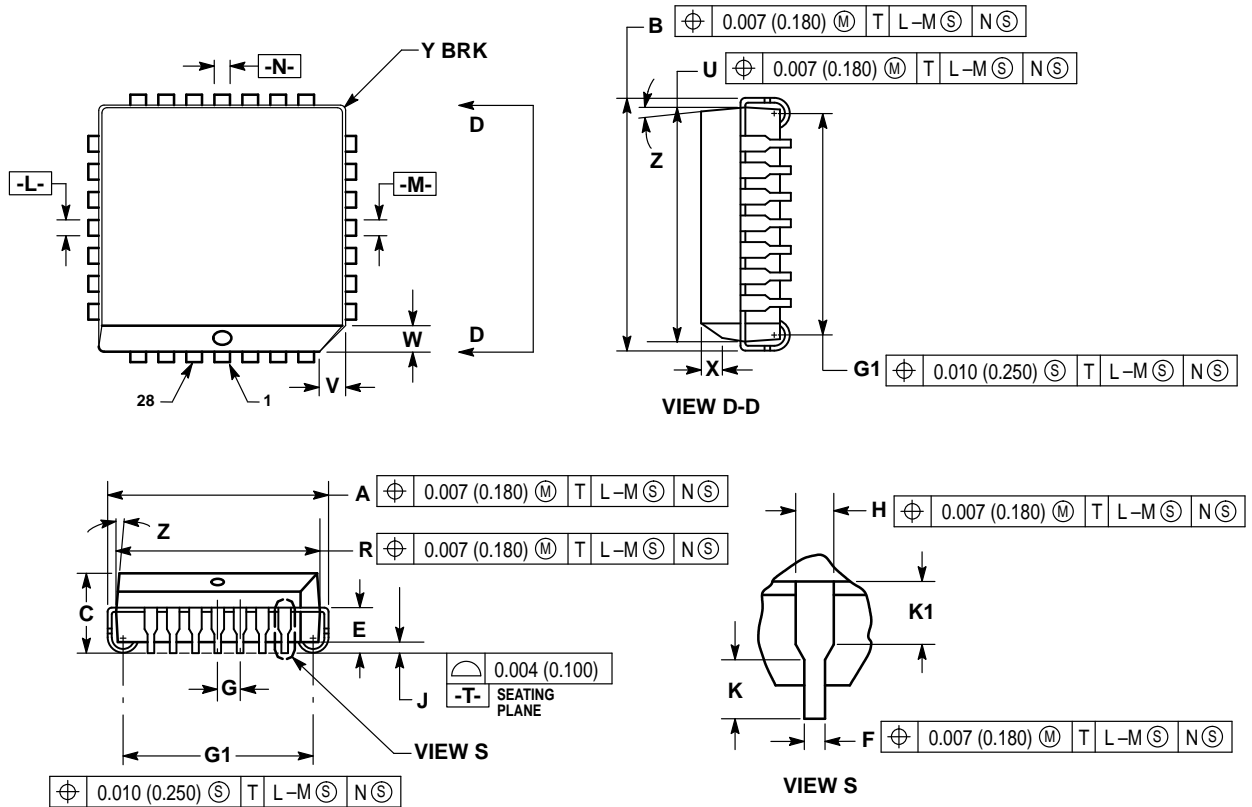
## AC CHARACTERISTICS ( $V_{EE} = V_{EE}(\text{min})$ to $V_{EE}(\text{max})$ ; $V_{CC} = V_{CCO} = \text{GND}$ )

| Symbol                 | Characteristic              | 0°C |     |     | 25°C |     |     | 85°C |     |     | Unit | Condition |     |    |  |
|------------------------|-----------------------------|-----|-----|-----|------|-----|-----|------|-----|-----|------|-----------|-----|----|--|
|                        |                             | min | typ | max | min  | typ | max | min  | typ | max |      |           |     |    |  |
| $t_{PLH}$<br>$t_{PHL}$ | Propagation Delay to Output |     |     |     |      |     |     |      |     |     | ps   |           |     |    |  |
|                        | D                           | 220 | 380 | 550 | 220  | 380 | 550 | 220  | 380 | 550 |      |           |     |    |  |
|                        | SEL                         | 425 | 600 | 800 | 425  | 600 | 800 | 425  | 600 | 800 |      |           |     |    |  |
| $t_{SKEW}$             | Within-Device Skew          |     | 70  |     |      | 70  |     |      | 70  |     | ps   | 1         |     |    |  |
| $t_r$<br>$t_f$         | Rise/Fall Times<br>20 - 80% |     | 275 | 400 | 650  |     | 275 | 400  | 650 |     | 275  | 400       | 650 | ps |  |

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

OUTLINE DIMENSIONS


FN SUFFIX  
 PLASTIC PLCC PACKAGE  
 CASE 776-02  
 ISSUE D



NOTES:

- DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
- DIM G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.
- DIM R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.
- THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY.
- DIMENSION H DOES NOT INCLUDE DAMBAR PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

| DIM | INCHES    |       | MILLIMETERS |       |
|-----|-----------|-------|-------------|-------|
|     | MIN       | MAX   | MIN         | MAX   |
| A   | 0.485     | 0.495 | 12.32       | 12.57 |
| B   | 0.485     | 0.495 | 12.32       | 12.57 |
| C   | 0.165     | 0.180 | 4.20        | 4.57  |
| E   | 0.090     | 0.110 | 2.29        | 2.79  |
| F   | 0.013     | 0.019 | 0.33        | 0.48  |
| G   | 0.050 BSC |       | 1.27 BSC    |       |
| H   | 0.026     | 0.032 | 0.66        | 0.81  |
| J   | 0.020     | —     | 0.51        | —     |
| K   | 0.025     | —     | 0.64        | —     |
| R   | 0.450     | 0.456 | 11.43       | 11.58 |
| U   | 0.450     | 0.456 | 11.43       | 11.58 |
| V   | 0.042     | 0.048 | 1.07        | 1.21  |
| W   | 0.042     | 0.048 | 1.07        | 1.21  |
| X   | 0.042     | 0.056 | 1.07        | 1.42  |
| Y   | —         | 0.020 | —           | 0.50  |
| Z   | 2°        |       | 10°         |       |
| G1  | 0.410     | 0.430 | 10.42       | 10.92 |
| K1  | 0.040     | —     | 1.02        | —     |

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