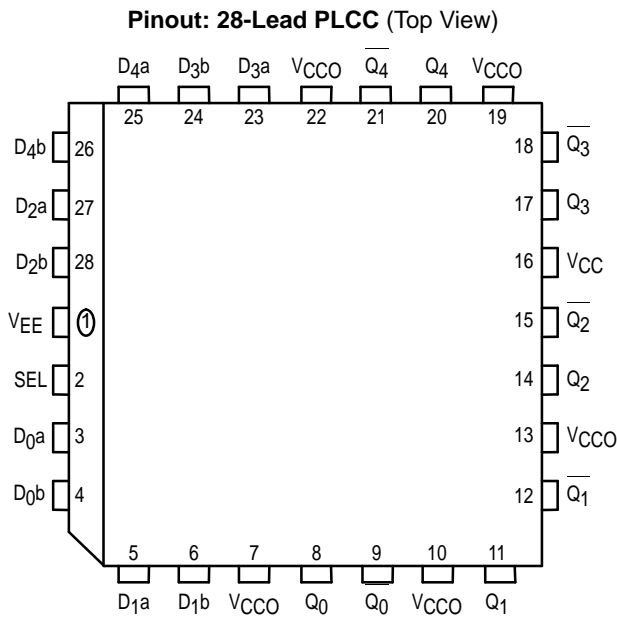


## 5-Bit 2:1 Multiplexer

The MC10E/100E158 contains five 2:1 multiplexers with differential outputs. The output data are controlled by the Select input (SEL).

- 600ps Max. D to Output
- 800ps Max. SEL to Output
- Differential Outputs
- One V<sub>CCO</sub> Pin Per Output Pair
- Extended 100E V<sub>EE</sub> Range of - 4.2V to - 5.46V
- 75kΩ Input Pulldown Resistors



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

### PIN NAMES

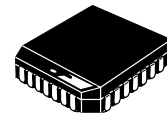
Pin	Function
D <sub>0a</sub> - D <sub>4a</sub>	Input Data a
D <sub>0b</sub> - D <sub>4b</sub>	Input Data b
SEL	Select Input
$\overline{Q_0} - \overline{Q_4}$	True Outputs
Q <sub>0</sub> - Q <sub>4</sub>	Inverted Outputs

### FUNCTION TABLE

SEL	Data
H	a
L	b

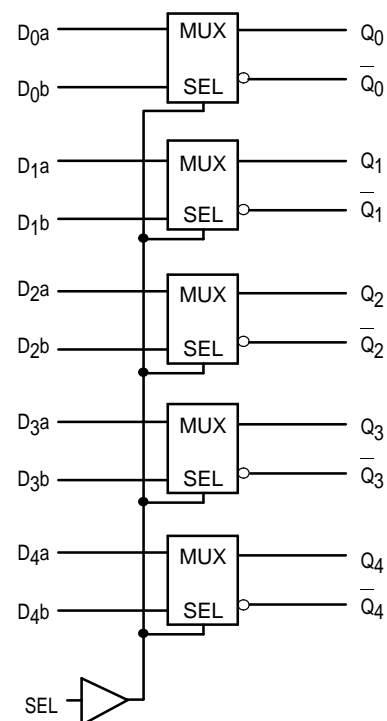
**MC10E158**  
**MC100E158**

**5-BIT 2:1**  
**MULTIPLEXER**



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

### LOGIC DIAGRAM



# MC10E158 MC100E158

## 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		33	40		33	40		33	40		
	100E		33	40		33	40		38	46		

## 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		
$t_{PLH}$ $t_{PHL}$	Propagation Delay to Output										ps	
	D	225	385	550	225	385	550	225	385	550		
	SEL	400	600	775	400	600	775	400	600	775		
$t_{SKEW}$	Within-Device Skew		60			60			60		ps	1
$t_r$ $t_f$	Rise/Fall Time 20 - 80%	275	425	650	275	425	650	275	425	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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