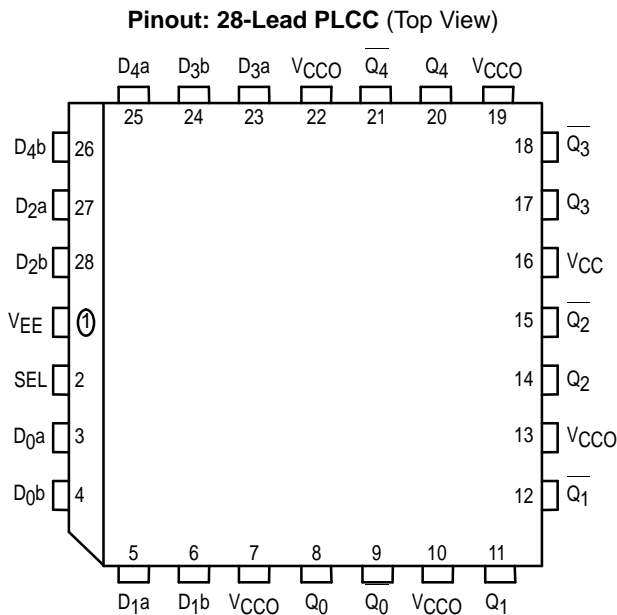


# 5-Bit 2:1 Multiplexer

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

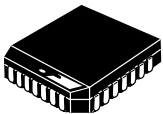
Pin	Function
D <sub>0a</sub> – D <sub>4a</sub> D <sub>0b</sub> – D <sub>4b</sub> SEL	Input Data a Input Data b Select Input
$\overline{Q_0}$ – $\overline{Q_4}$ Q <sub>0</sub> – Q <sub>4</sub>	True Outputs Inverted Outputs

## FUNCTION TABLE

SEL	Data
H	a
L	b

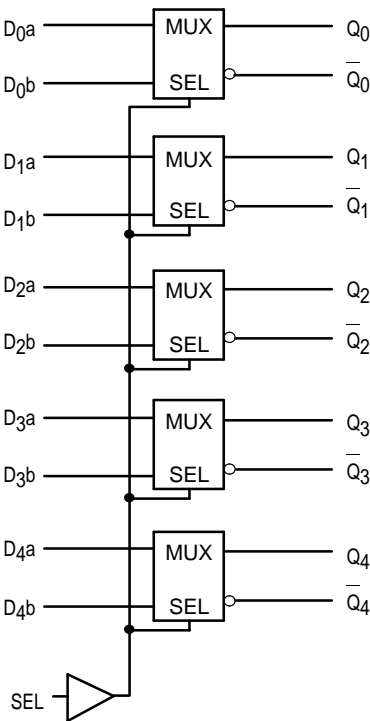
MC10E158  
MC100E158

5-BIT 2:1  
MULTIPLEXER



FN SUFFIX  
PLASTIC PACKAGE  
CASE 776-02

## LOGIC DIAGRAM



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

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
$I_{IH}$	Input HIGH Current D SEL			200 150			200 150			200 150	$\mu A$	
$I_{EE}$	Power Supply Current 10E 100E		33 33	40 40		33 33	40 40		33 38	40 46	mA	

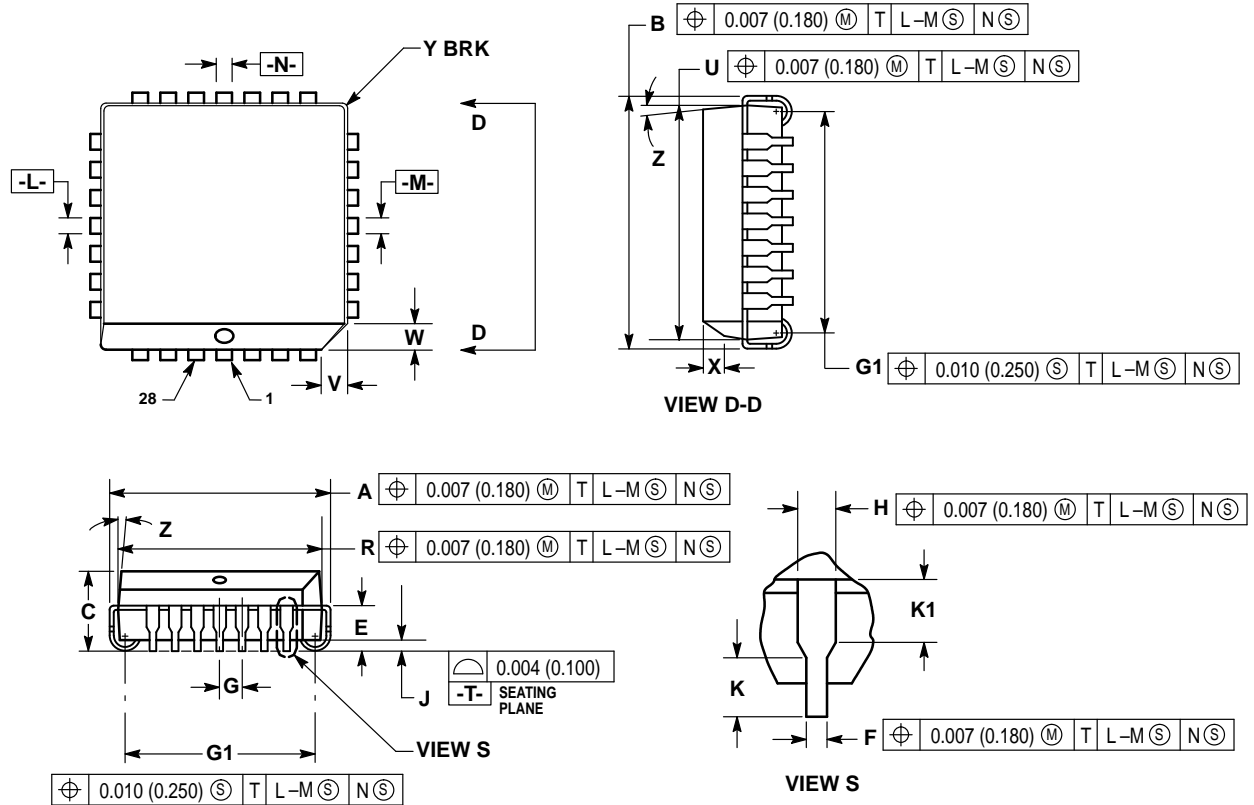
**AC CHARACTERISTICS** ( $V_{EE} = V_{EE(min)}$  to  $V_{EE(max)}$ ;  $V_{CC} = V_{CCO} = GND$ )

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 D SEL	225 400	385 600	550 775	225 400	385 600	550 775	225 400	385 600	550 775	ps	
$t_{SKEW}$	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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