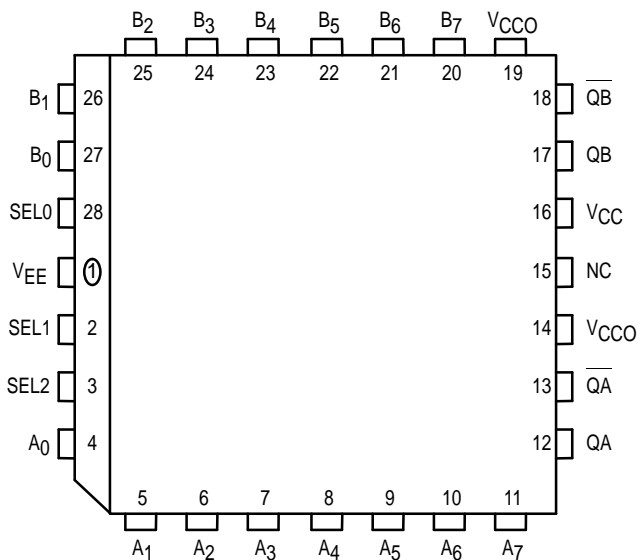


## 2-Bit 8:1 Multiplexer

The MC10E/100E163 contains two 8:1 multiplexers with differential outputs and common select inputs. The select inputs (SEL0, 1, 2) control which one of the eight data inputs (A<sub>0</sub> – A<sub>7</sub>, B<sub>0</sub> – B<sub>7</sub>) is propagated to the output.

- 850ps Max. D to Output
- Differential Outputs
- Extended 100E V<sub>EE</sub> Range of – 4.2V to – 5.46V
- 75kΩ Input Pulldown Resistors

**Pinout: 28-Lead PLCC (Top View)**



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

### FUNCTION TABLE

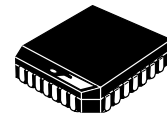
SEL2	SEL1	SEL0	A/B Data
L	L	L	0
L	L	H	1
L	H	L	2
L	H	H	3
H	L	L	4
H	L	H	5
H	H	L	6
H	H	H	7

### PIN NAMES

Pin	Function
A <sub>0</sub> – A <sub>7</sub>	A Data Inputs
B <sub>0</sub> – B <sub>7</sub>	B Data Inputs
SEL0, 1, 2	Select Inputs
<u>QA</u> , <u>QB</u>	True Outputs
QA, QB	Inverting Outputs

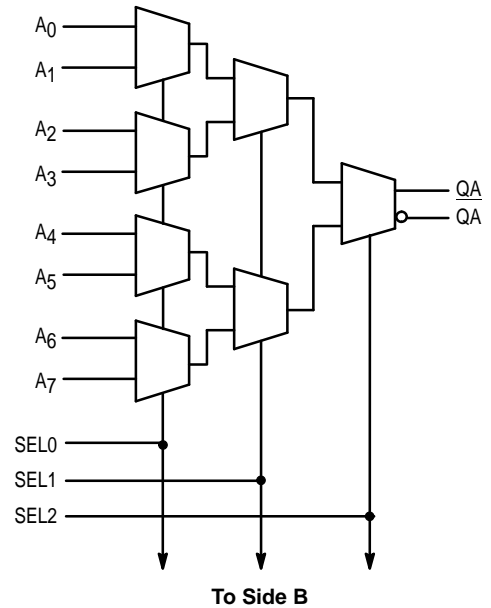
**MC10E163**  
**MC100E163**

**2-BIT**  
**8:1 MULTIPLEXER**



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

### LOGIC DIAGRAM



To Side B



MC10E163 MC100E163

**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			150			150			150	$\mu\text{A}$	
$I_{EE}$	Power Supply Current										$\text{mA}$	
	10E		73	88		73	88		73	88		
	100E		73	88		73	88		83	100		

**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 D SEL0 SEL1 SEL2	400	550	800	400	550	800	400	550	800		ps
$t_{SKEW}$	Within-Device Skew An, Bn to Q An, Am to QA Bn, Bm to QB		40			40			40		ps	1
$t_r$ $t_f$	Rise/Fall Time 20 - 80%	275	375	575	275	375	575	275	375	575	ps	

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

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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