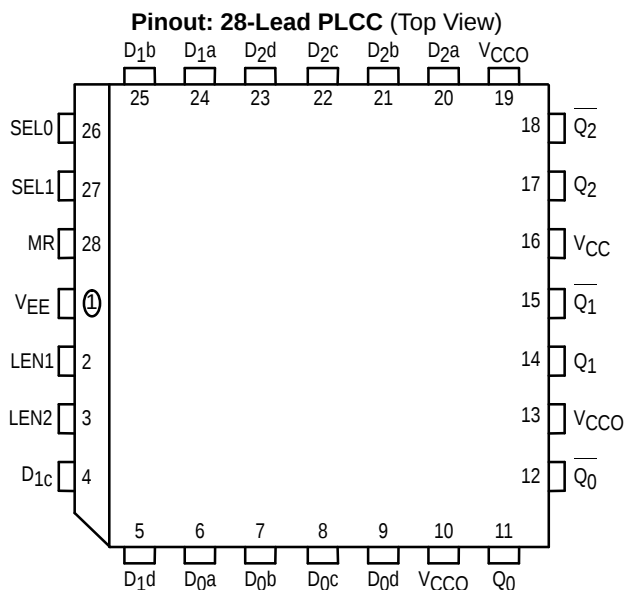


3-Bit 4:1 Mux-Latch

The MC10E100E156 contains three 4:1 multiplexers followed by transparent latches with differential outputs. When both Latch Enables (LEN1, LEN2) are LOW, the latch is transparent, and output data is controlled by the multiplexer select controls (SEL0, SEL1). A logic HIGH on either LEN1 or LEN2 (or both) latches the outputs. The Master Reset (MR) overrides all other controls to set the Q outputs LOW.

- 950ps Max. D to Output
- 850ps Max. LEN to Output
- Differential Outputs
- Asynchronous Master Reset
- Dual Latch-Enables
- Extended 100E V_{EE} Range of – 4.2V to – 5.46V
- 75k Ω Input Pulldown Resistors



* All V_{CC} and V_{CCO} pins are tied together on the die.

PIN NAMES

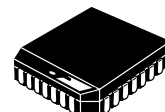
Pin	Function
$D_0x - D_3x$	Input Data
SEL0, SEL1	Select Inputs
LEN1, LEN2	Latch Enables
MR	Master Reset
$Q_0 - Q_2$	True Outputs
$\overline{Q_0} - \overline{Q_2}$	Inverted Outputs

FUNCTION TABLE

SEL1	SEL0	Data
L	L	a
L	H	b
H	L	c
H	H	d

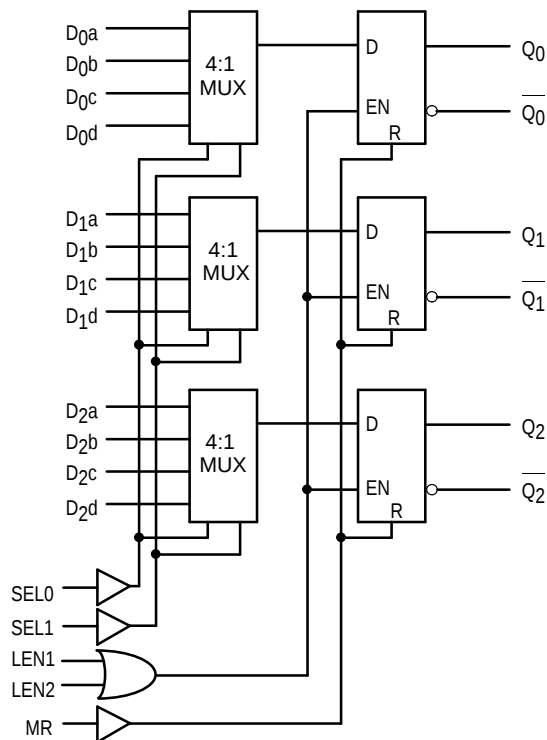
MC10E156
MC100E156

3-BIT 4:1
MUX-LATCH



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			150			150			150	μA	
I_{EE}	Power Supply Current										mA	
	10E		75	90		75	90		75	90		
	100E		75	90		75	90		86	103		

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 SEL0 SEL1 LEN MR	400 550 450 350 350	600 775 650 500 600	900 1050 900 800 825	400 550 450 350 350	600 775 650 500 600	900 1050 900 800 825	400 550 450 350 350	600 775 650 500 600	900 1050 900 800 825	ps	
t_s	Setup Time D SEL0 SEL1	400 700 600	275 300 400		400 700 600	275 300 400		400 700 600	275 300 400		ps	
t_h	Hold Time D SEL0 SEL1	300 100 200	– 275 – 300 – 400		300 100 200	– 275 – 300 – 400		300 100 200	– 275 – 300 – 400		ps	
t_{RR}	Reset Recovery Time	800	600		800	600		800	600			ps
t_{PW}	Minimum Pulse Width MR	400			400			400			ps	
t_{SKEW}	Within-Device Skew		50			50			50		ps	1
t_r t_f	Rise/Fall Times 20 - 80%	275	475	700	275	475	700	275	475	700	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°	2°	10°
G1	0.410	0.430	10.42	10.92
K1	0.040	—	1.02	—

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