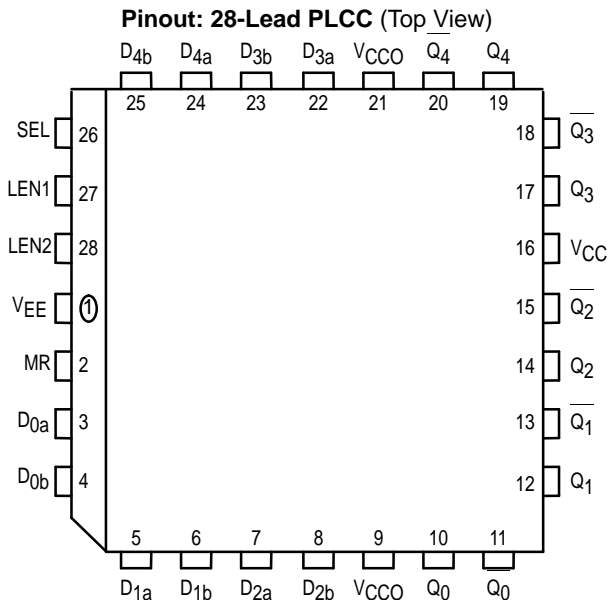


## 5-Bit 2:1 Mux-Latch

The MC10E100E154 contains five 2:1 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 control, SEL. 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.

- 850ps Max. LEN to Output
- 825ps Max. D to Output
- Differential Outputs
- Asynchronous Master Reset
- Dual Latch-Enables
- 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

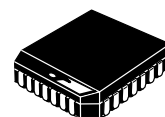
Pin	Function
D <sub>0a</sub> - D <sub>4a</sub>	Input Data a
D <sub>0b</sub> - D <sub>4b</sub>	Input Data b
SEL	Data Select Input
LEN1, LEN2	Latch Enables
MR	Master Reset
$\overline{Q_0} - \overline{Q_4}$	True Outputs
Q <sub>0</sub> - Q <sub>4</sub>	Inverted Outputs

### TRUTH TABLE

SEL	Data
H	a
L	b

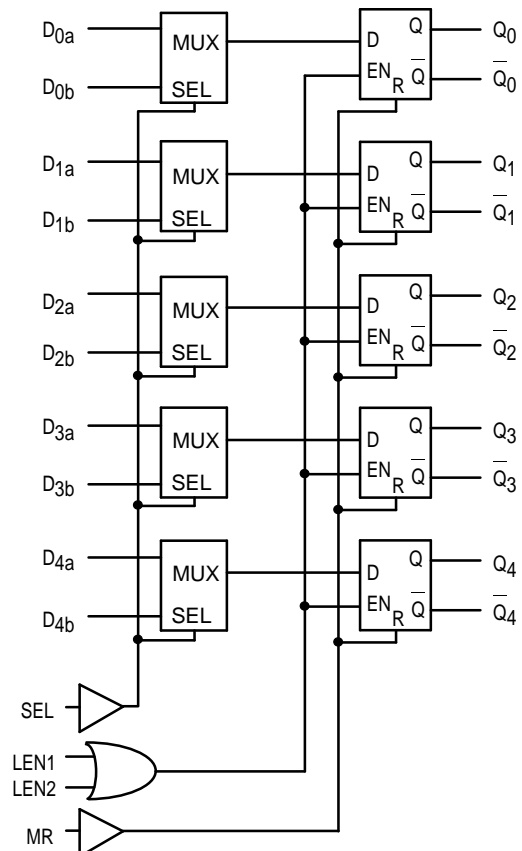
**MC10E154**  
**MC100E154**

**5-BIT 2:1**  
**MUX-LATCH**



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

### LOGIC DIAGRAM



# MC10E154 MC100E154

## 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		76	91		76	91		76	91		
	100E		76	91		76	91		87	105		

## 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										$\text{ps}$	
	D	325	500	700	325	500	700	325	500	700		
	SEL	475	650	925	475	650	925	475	650	925		
	LEN	350	500	750	350	500	750	350	500	750		
	MR	450	600	800	450	600	800	450	600	800		
$t_s$	Setup Time										$\text{ps}$	
	D	300	100		300	100		300	100			
	SEL	500	250		500	250		500	250			
$t_h$	Hold Time										$\text{ps}$	
	D	300	-100		300	-100		300	-100			
	SEL	200	-250		200	-250		200	-250			
$t_{RR}$	Reset Recovery Time	800	600		800	600		800	600			$\text{ps}$
$t_{PW}$	Minimum Pulse Width										$\text{ps}$	
	MR	400			400			400				
$t_{SKEW}$	Within-Device Skew		50			50			50		$\text{ps}$	1
$t_r$ $t_f$	Rise/Fall Times										$\text{ps}$	
	20 - 80%	300	475	800	300	475	800	300	475	800		

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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