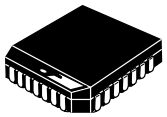
6-Bit D Latch

MC10E150
MC100E150

6-BIT D LATCH

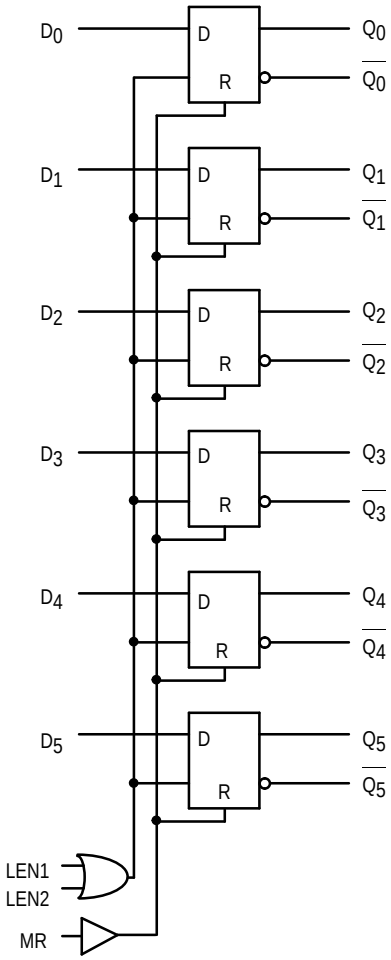
The MC10E/100E150 contains six D-type latches with differential outputs. When both Latch Enables (LEN1, LEN2) are LOW, the latch is transparent and input data transitions propagate through to the output. A logic HIGH on either LEN1 or LEN2 (or both) latches the data. The Master Reset (MR) overrides all other controls to set the Q outputs low.

- 800ps Max. Propagation Delay
- Extended 100E V_{EE} Range of – 4.2V to – 5.46V
- 75kΩ Input Pulldown Resistors

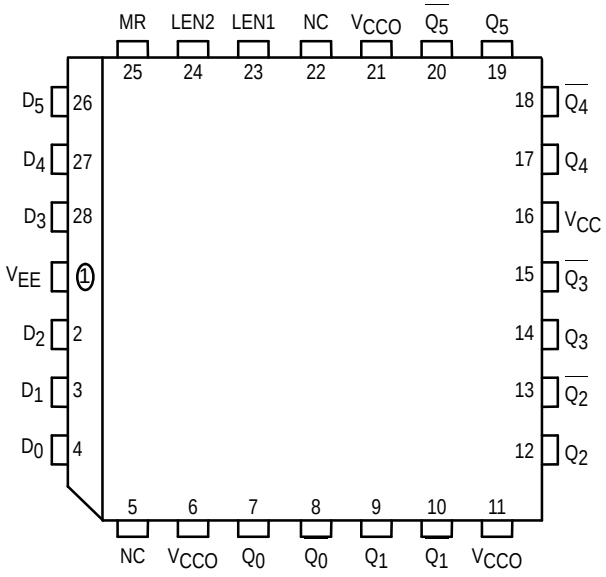


FN SUFFIX
PLASTIC PACKAGE
CASE 776-02

LOGIC DIAGRAM



Pinout: 28-Lead PLCC (Top View)



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

PIN NAMES

Pin	Function
$D_0 – D_5$	Data Inputs
LEN1, LEN2	Latch Enables
MR	Master Reset
$Q_0 – Q_5$	True Outputs
$\overline{Q}_0 – \overline{Q}_5$	Inverting Outputs

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

		0°C			25°C			85°C				
Symbol	**Characteristic**	**min**	**typ**	**max**	**min**	**typ**	**max**	**min**	**typ**	**max**	**Unit**	**Condition**
I_{IH}	Input HIGH Current										μA	
	D			200			200			200		
	LEN, MR			150			150			150		
I_{EE}	Power Supply Current										mA	
	10E		52	62		52	62		52	62		
	100E		52	62		52	62		60	72		

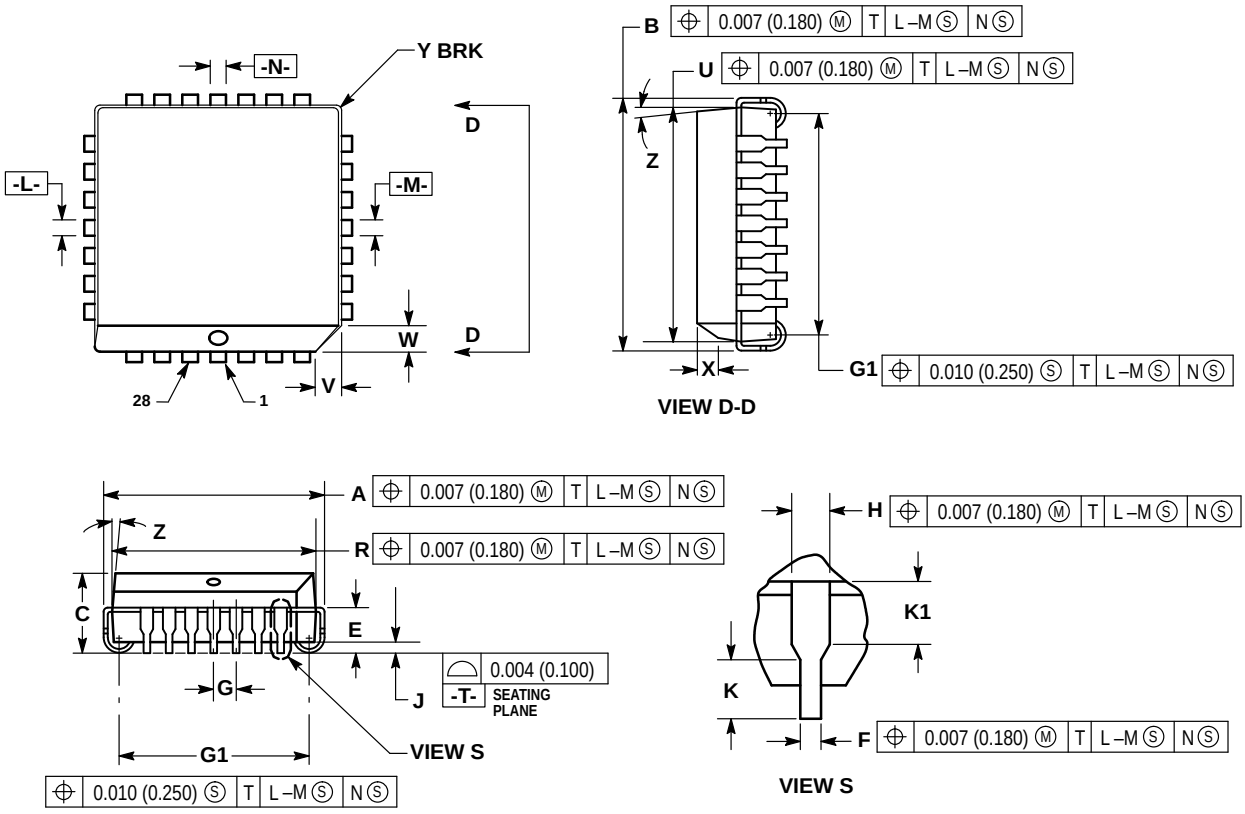
AC CHARACTERISTICS (V_{EE} = V_{EE}(min) to V_{EE}(max); V_{CC} = V_{CCO} = GND)

		0°C			25°C			85°C				
Symbol	**Characteristic**	**min**	**typ**	**max**	**min**	**typ**	**max**	**min**	**typ**	**max**	**Unit**	**Condition**
t_{PLH}	Propagation Delay to Output										ps	
t_{PHL}	D	250	375	550	250	375	550	250	375	550		
	LEN	375	500	700	375	500	700	375	500	700		
	MR	450	625	750	450	625	750	450	625	750		
t_S	Setup Time										ps	
	D	200	50		200	50		200	50			
t_h	Hold Time										ps	
	D	200	– 50		200	– 50		200	– 50			
t_{RR}	Reset Recovery Time	750	650		750	650		750	650		ps	ps
t_{PW}	Minimum Pulse Width										ps	
	MR	400			400			400				
t_{SKEW}	Within-Device Skew		50			50			50		ps	1
t_r	Rise/Fall Times										ps	
t_f	20 - 80%	300	450	650	300	450	650	300	450	650		

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:
1. DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
2. DIM G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.
3. DIM R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
5. CONTROLLING DIMENSION: INCH.
6. 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.
7. 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).

	INCHES		MILLIMETERS	
DIM	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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