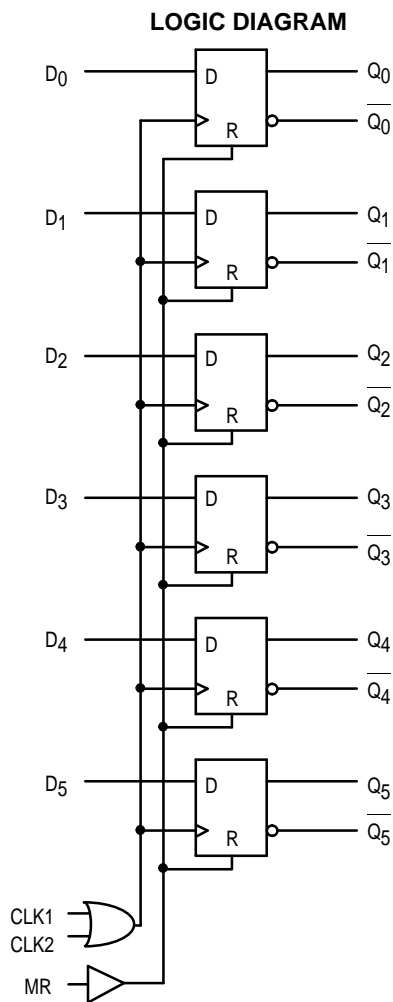


# 6-Bit D Register

The MC10E/100E151 contains 6 D-type, edge-triggered, master-slave flip-flops with differential outputs. Data enters the master when both CLK1 and CLK2 are LOW, and is transferred to the slave when CLK1 or CLK2 (or both) go HIGH. The asynchronous Master Reset (MR) makes all Q outputs go LOW.

- 1100MHz Min. Toggle Frequency
- Differential Outputs
- Asynchronous Master Reset
- Dual Clocks
- Extended 100E V<sub>EE</sub> Range of - 4.2V to - 5.46V
- 75kΩ Input Pulldown Resistors

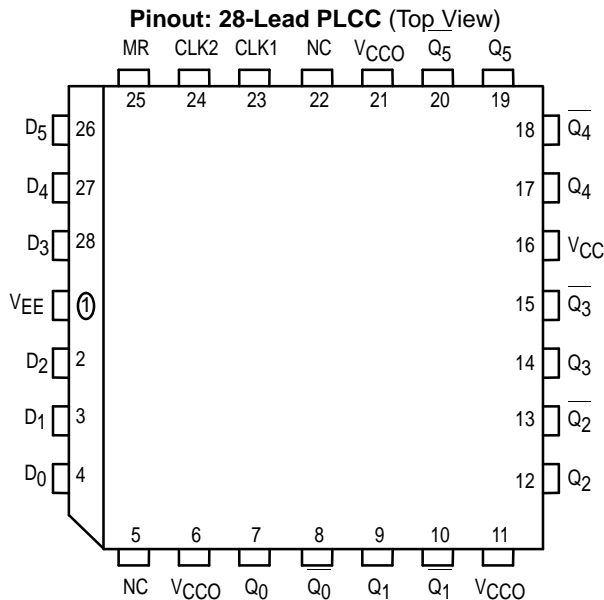
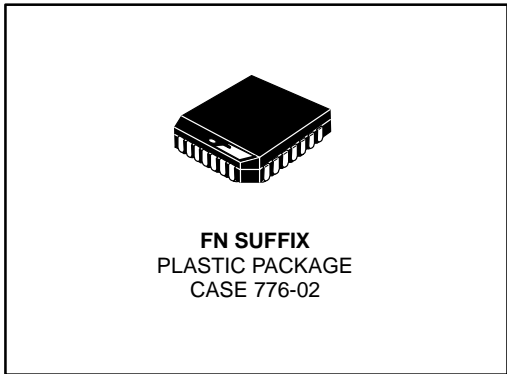


**PIN NAMES**

Pin	Function
D <sub>0</sub> – D <sub>5</sub>	Data Inputs
CLK1, CLK2	Clock Inputs
MR	Master Reset
$\overline{Q_0} - \overline{Q_5}$	True Outputs
Q <sub>0</sub> – Q <sub>5</sub>	Inverted Outputs

**MC10E151**  
**MC100E151**

**6-BIT D REGISTER**



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

# MC10E151 MC100E151

## DC CHARACTERISTICS (V<sub>EE</sub> = V<sub>EE</sub>(min) to V<sub>EE</sub>(max); V<sub>CC</sub> = V<sub>CCO</sub> = GND)

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
I <sub>IH</sub>	Input HIGH Current			150			150			150	μA	
I <sub>EE</sub>	Power Supply Current										mA	
	10E		65	78		65	78		65	78		
	100E		65	78		65	78		75	90		

## AC CHARACTERISTICS (V<sub>EE</sub> = V<sub>EE</sub>(min) to V<sub>EE</sub>(max); V<sub>CC</sub> = V<sub>CCO</sub> = GND)

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
f <sub>MAX</sub>	Max. Toggle Frequency	1100	1400		1100	1400		1100	1400		MHz	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay to Output Clk MR	475	650	800	475	650	800	475	650	800	ps	
		475	650	850	475	650	850	475	650	850		
t <sub>s</sub>	Setup Time D	0	-175		0	-175		0	-175		ps	
t <sub>h</sub>	Hold Time D	350	175		350	175		350	175		ps	
t <sub>RR</sub>	Reset Recovery Time	750	550		750	550		750	550			ps
t <sub>PW</sub>	Minimum Pulse Width CLK, MR	400			400			400			ps	
t <sub>SKEW</sub>	Within-Device Skew		65			65			65		ps	1
t <sub>r</sub> t <sub>f</sub>	Rise/Fall Times 20 - 80%	300	450	700	300	450	700	300	450	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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