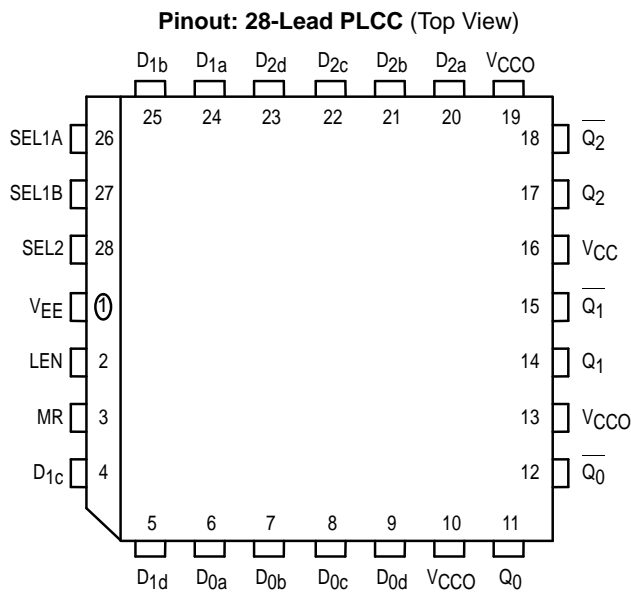


## 3-Bit 4:1 Mux-Latch

The MC10E/100E256 contains three 4:1 multiplexers followed by transparent latches with differential outputs. Separate Select controls are provided for the leading 2:1 mux pairs (see logic symbol).

When the Latch Enable (LEN) is LOW, the latch is transparent, and output data is controlled by the multiplexer select controls. A logic HIGH on LEN latches the outputs. The Master Reset (MR) overrides all other controls to set the Q outputs LOW.

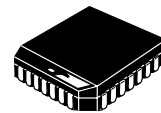
- 950ps Max. D to Output
- 850ps Max. LEN to Output
- Split Select
- Differential Outputs
- Extended 100E V<sub>EE</sub> Range of -4.2V to -5.46V
- 75kΩ Input Pulldown Resistors



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

**MC10E256**  
**MC100E256**

**3-BIT 4:1**  
**MUX-LATCH**



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

### FUNCTION TABLE

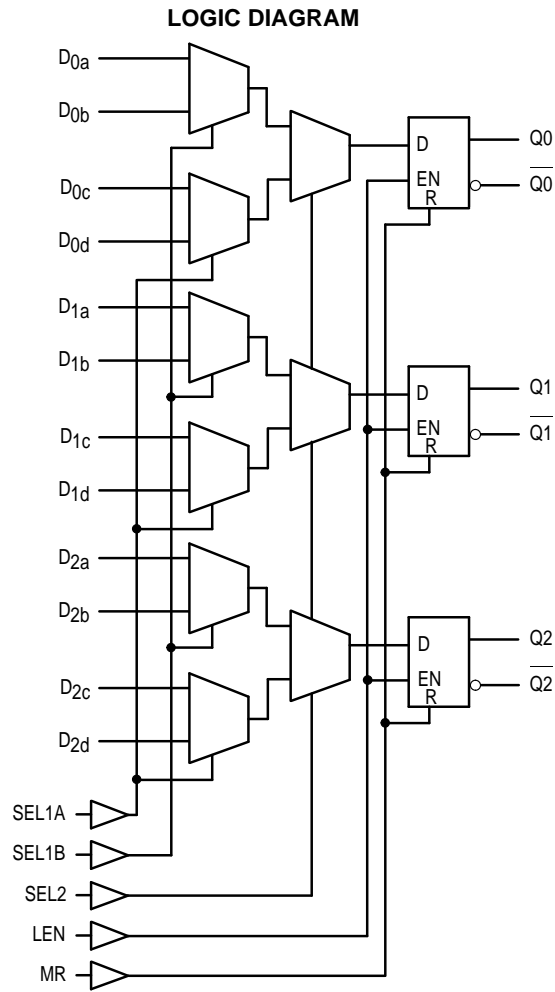
Pin	State	Operation
SEL2	H	Output c/d Data
SEL1A	H	Input d Data
SEL1B	H	Input b Data

### PIN NAMES

Pin	Function
D <sub>0x</sub> - D <sub>2x</sub>	Data Inputs
SEL1A, SEL1B	First-stage Select Inputs
SEL2	Second-stage Select input
LEN	Latch Enable
MR	Master Reset
Q <sub>0</sub> , Q <sub>0</sub> - Q <sub>2</sub> , Q <sub>2</sub>	Data Outputs



MC10E256 MC100E256



**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	$\mu A$	
$I_{EE}$	Power Supply Current										$mA$	
	10E		69	83		69	83		69	83		
	100E		69	83		69	83		79	96		

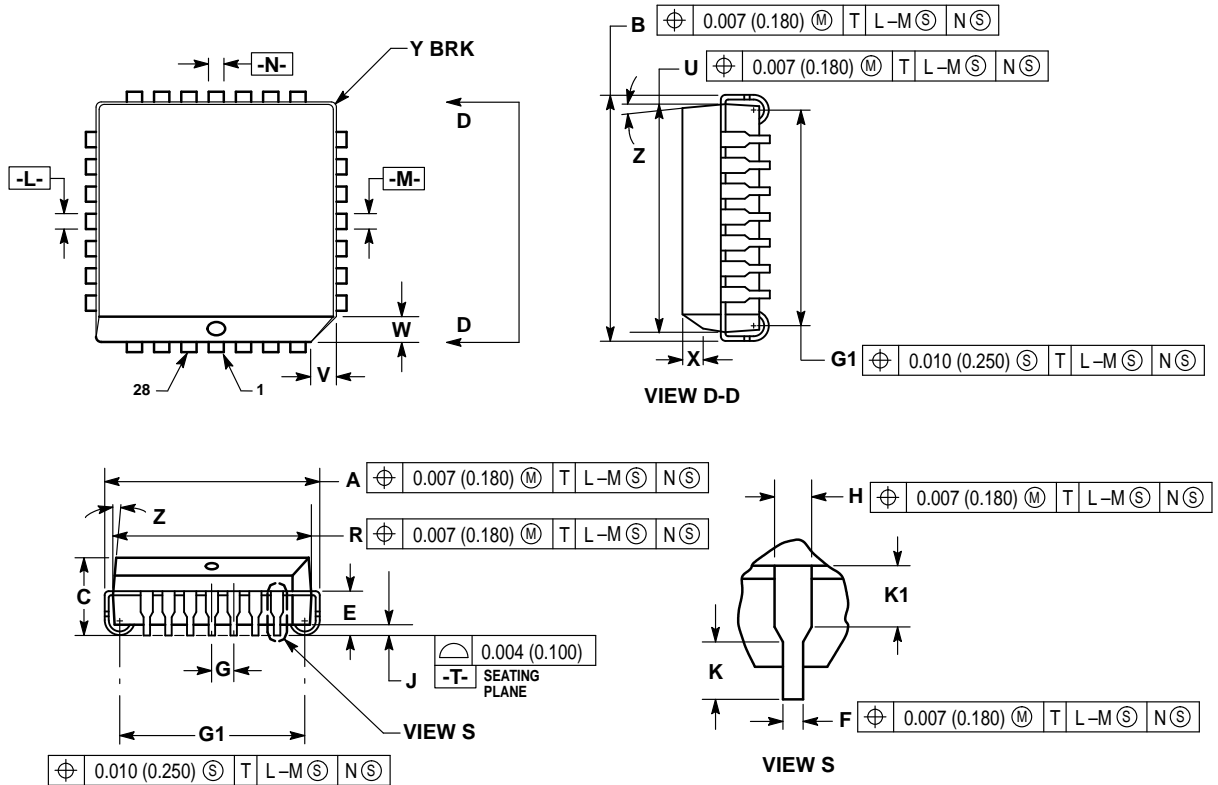
**AC CHARACTERISTICS** ( $V_{EE} = V_{EE(\min)}$  to  $V_{EE(\max)}$ ;  $V_{CC} = V_{CCO} = \text{GND}$ )

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay to Output D SEL1 SEL2 LEN MR	400	600	900	400	600	900	400	600	900	ps	
t <sub>s</sub>	Setup Time D SEL1 SEL2	400	275		400	275		400	275		ps	
t <sub>h</sub>	Hold Time D SEL1 SEL2	300	-275		300	-275		300	-275		ps	
t <sub>RR</sub>	Reset Recovery Time	700	600		700	600		700	600		ps	
t <sub>PW</sub>	Minimum Pulse Width MR	400			400			400			ps	
t <sub>SKEW</sub>	Within-Device Skew		50			50			50		ps	1
t <sub>r</sub> t <sub>f</sub>	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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MC10E256/D

