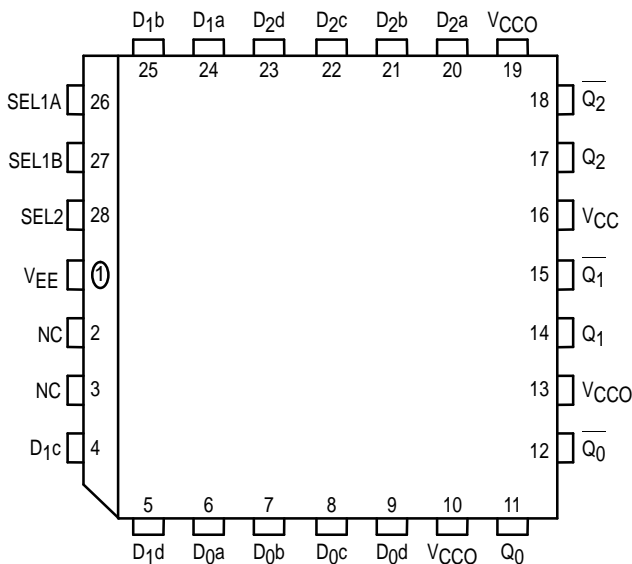


## 3-Bit 4:1 Multiplexer

The MC10E/100E171 contains three 4:1 multiplexers with differential outputs. Separate Select controls are provided for the leading 2:1 mux pairs (see logic symbol). The three Select inputs control which one of the four data inputs in each case is propagated to the corresponding output.

- 725ps Max. D to Output
- Split Select
- Differential Outputs
- Extended 100E  $V_{EE}$  Range of  $-4.2V$  to  $-5.46V$
- $75k\Omega$  Input Pulldown Resistors

Pinout: 28-Lead PLCC (Top View)



\* All VCC and VCCO pins are tied together on the die.

### PIN NAMES

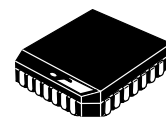
Pin	Function
$D_{0x} - D_{2x}$	Data Inputs
SEL1A, SEL1B	First-stage Select Inputs
SEL2	Second-stage Select Input
$Q_0 - \overline{Q_2}$	True Output
$Q_0 - \overline{Q_2}$	Inverted Output

### FUNCTION TABLE

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

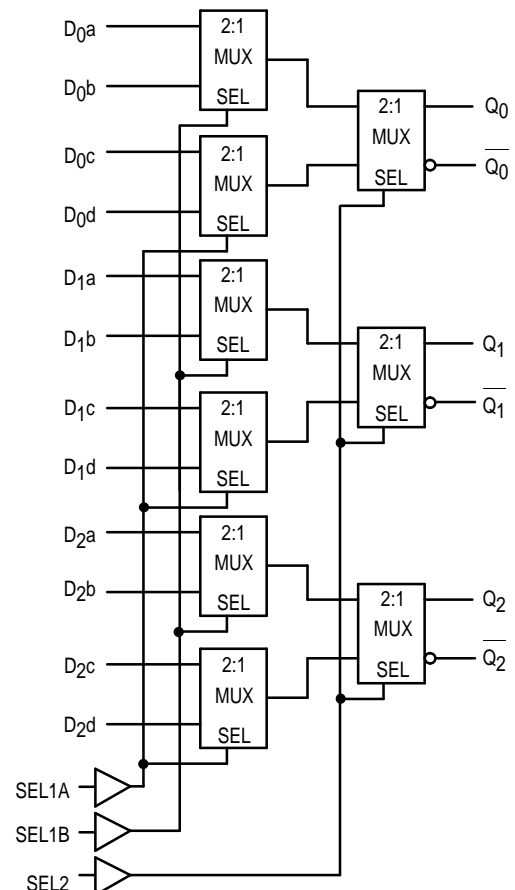
**MC10E171**  
**MC100E171**

**3-BIT 4:1**  
**MULTIPLEXER**



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

### LOGIC DIAGRAM



# MC10E171 MC100E171

## 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		56	67		56	67		56	67		
	100E		56	67		56	67		65	77		

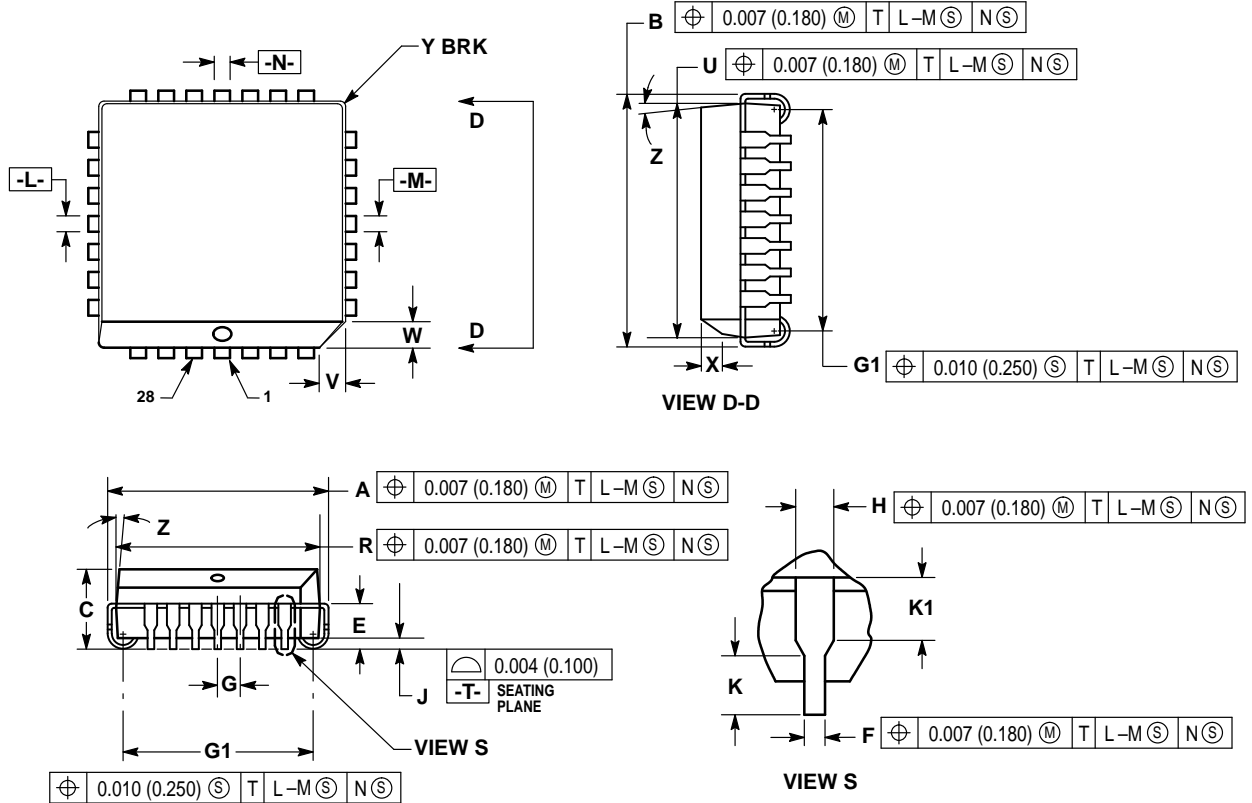
## AC CHARACTERISTICS ( $V_{EE} = V_{EE}(\text{min})$ to $V_{EE}(\text{max})$ ; $V_{CC} = V_{CCO} = \text{GND}$ )

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 D SEL1 SEL2	275	480	650	275	480	650	275	480	650	ps	
		450	650	850	450	650	850	450	650	850		
		350	550	700	350	550	700	350	550	700		
$t_{SKEW}$	Within-Device Skew Dnm, Dnm to Qn Da, Db, Dc, Dd to Q		60			60			60		ps	1
			40			40			40			
$t_r$ $t_f$	Rise/Fall Time 20 - 80%	300	475	650	300	475	650	300	475	650	ps	

1. Within-device skew is defined as identical transitions on similar paths through a device; n = 0,1,2 m = a,b,c,d.

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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