2-Bit 8:1 Multiplexer

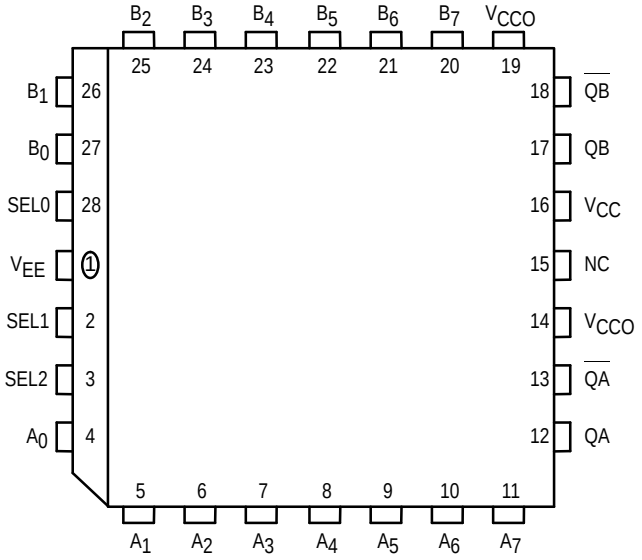
MC10E163
MC100E163

2-BIT
8:1 MULTIPLEXER

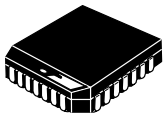
The MC10E/100E163 contains two 8:1 multiplexers with differential outputs and common select inputs. The select inputs (SEL0, 1, 2) control which one of the eight data inputs ($A_0 – A_7$, $B_0 – B_7$) is propagated to the output.

- 850ps Max. D to Output
- Differential Outputs
- Extended 100E V_{EE} Range of – 4.2V to – 5.46V
- 75kΩ Input Pulldown Resistors

Pinout: 28-Lead PLCC (Top View)

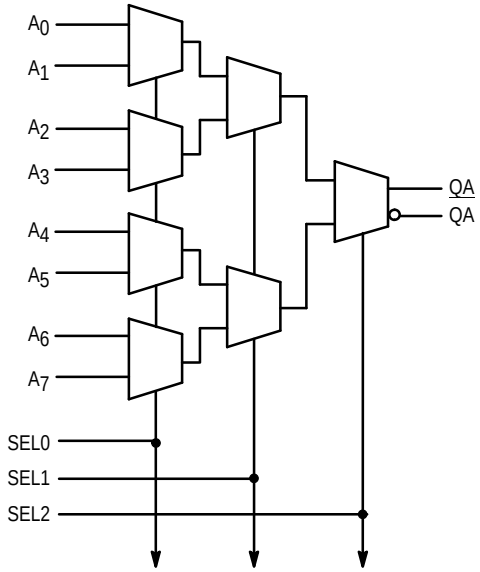


* All V_{CC} and V_{CCO} pins are tied together on the die.



FN SUFFIX
PLASTIC PACKAGE
CASE 776-02

LOGIC DIAGRAM



To Side B

FUNCTION TABLE

SEL2	SEL1	SEL0	A/B Data
L	L	L	0
L	L	H	1
L	H	L	2
L	H	H	3
H	L	L	4
H	L	H	5
H	H	L	6
H	H	H	7

PIN NAMES

Pin	Function
$A_0 – A_7$	A Data Inputs
$B_0 – B_7$	B Data Inputs
SEL0, 1, 2	Select Inputs
$\overline{QA}$, $\overline{QB}$	True Outputs
QA, QB	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			150			150			150	μA	
I_{EE}	Power Supply Current										mA	
	10E		73	88		73	88		73	88		
	100E		73	88		73	88		83	100		

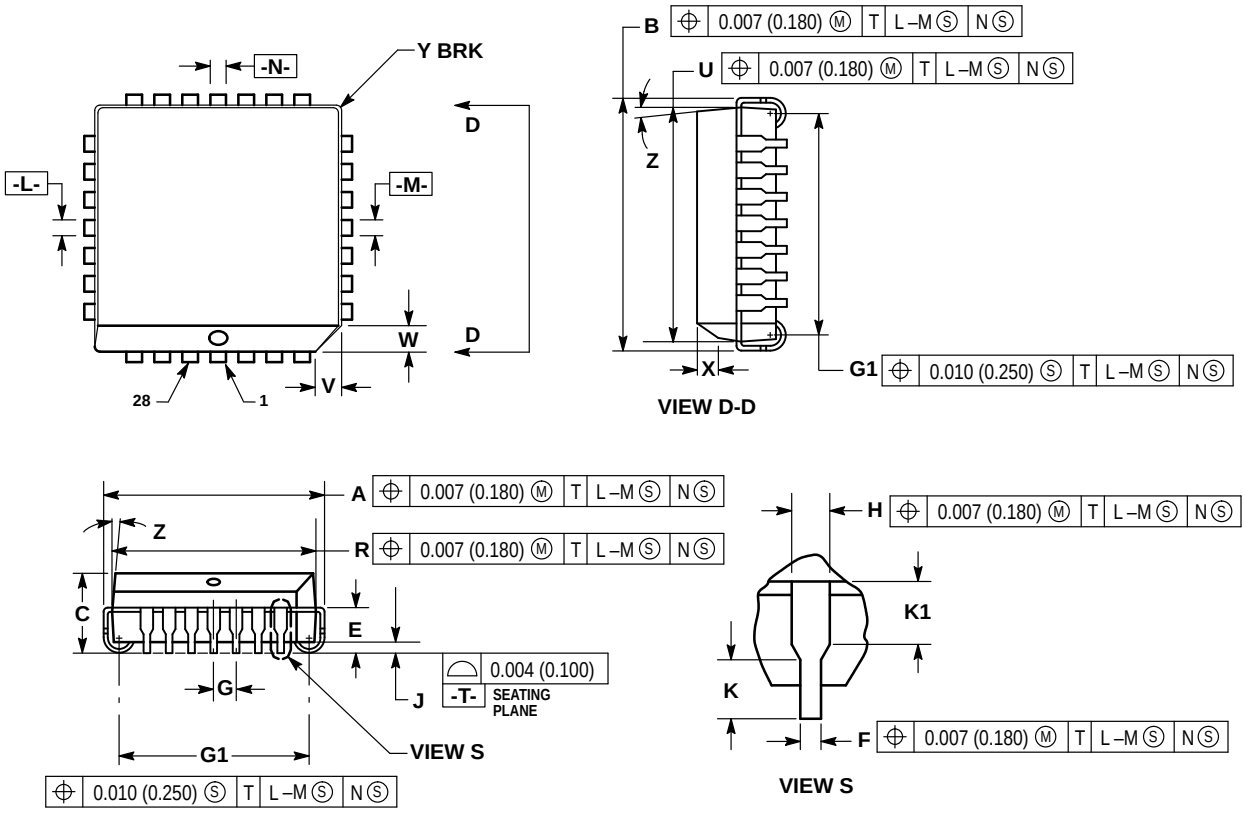
AC CHARACTERISTICS (V_{EE} = V_{EE}(min) to V_{EE}(max); V_{CC} = V_{CCO} = GND)

		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	400	550	800	400	550	800	400	550	800		
	SEL0	525	725	950	525	725	950	525	725	950		
	SEL1	425	625	850	425	625	850	425	625	850		
	SEL2	350	525	725	350	525	725	350	525	725		
t_{SKEW}	Within-Device Skew										ps	1
	An, Bn to Q		40			40			40			
	An, Am to QA		30			30			30			
	Bn, Bm to QB		30			30			30			
t_r	Rise/Fall Time										ps	
t_f	20 - 80%	275	375	575	275	375	575	275	375	575		

1. Within-device skew is defined as identical transitions on similar paths through a device; n = 0-7, m n, m = 0-7.

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	—

How to reach us:
USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 20912; Phoenix, Arizona 85036. 1–800–441–2447 or 602–303–5454

MFAX: RMFAX0@email.sps.mot.com – TOUCHTONE 602–244–6609
INTERNET: http://Design–NET.com

JAPAN: Nippon Motorola Ltd.; Tatsumi–SPD–JLDC, 6F Seibu–Butsuryu–Center,
3–14–2 Tatsumi Koto–Ku, Tokyo 135, Japan. 03–81–3521–8315

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852–26629298