F100163

DUAL 8-INPUT MULTIPLEXER

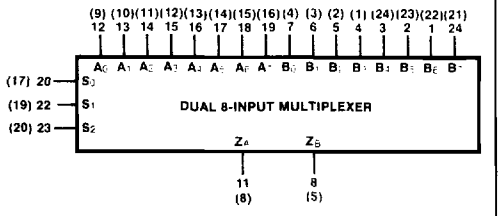
F100K SERIES ECL

DESCRIPTION — The F100163 is a dual 8-Input Multiplexer. The Data Select (Sn) inputs determine which bit (An and Bn) will be presented at the Outputs (Z_A and Z_B respectively). The same bit (0-7) will be selected for both the Z_A and Z_B output.

PIN NAMES

Z_n	Data Outputs
S_n	Data Selects
An, Bn	Data Inputs

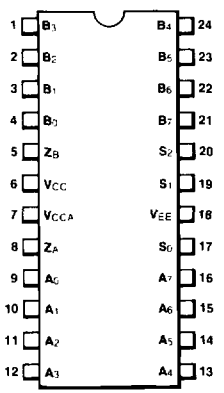
LOGIC SYMBOL



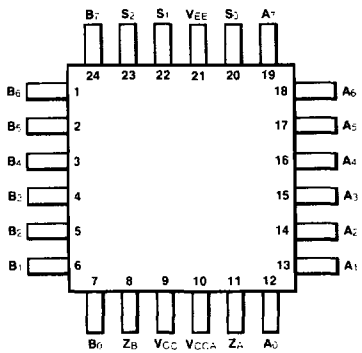
V_{CC} = 9 (6)
V_{CCA} = 10 (7)
V_{EE} = 21 (18)

CONNECTION DIAGRAMS

DIP (TOP VIEW)



FLATPAK (TOP VIEW)



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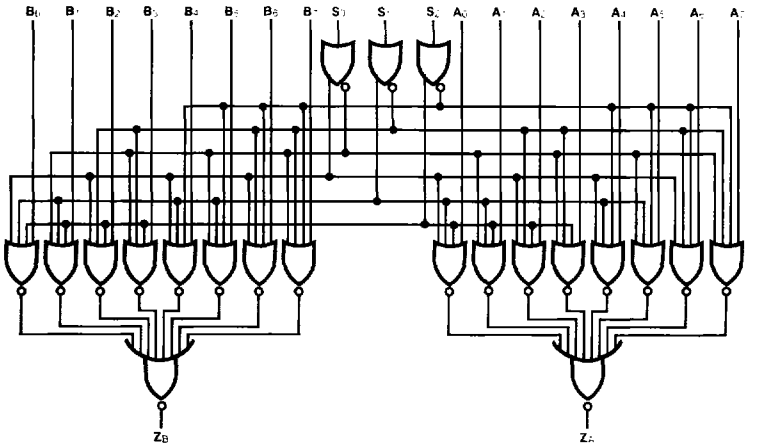
LOGIC DIAGRAM



PARTIAL TRUTH TABLE

INPUTS											OUTPUT
ADDRESS			DATA								
S_2	S_1	S_0	A_7 B_7	A_6 B_6	A_5 B_5	A_4 B_4	A_3 B_3	A_2 B_2	A_1 B_1	A_0 B_0	Z_A Z_B
L L	L L	L L								L H	L H
L L	L L	H H							L H		L H
L L	H H	L L						L H			L H
L L	H H	H H					L H				L H
H H	L L	L L				L H					L H
H H	L L	H H			L H						L H
H H	H H	L L		L H							L H
H H	H H	H H	L H								L H

H = High Level
L = Low Level
Blank = X = Irrelevant

DC CHARACTERISTICS: V_{EE} = -4.5 V, V_{CC} = GND, T_A = 0°C +85°C

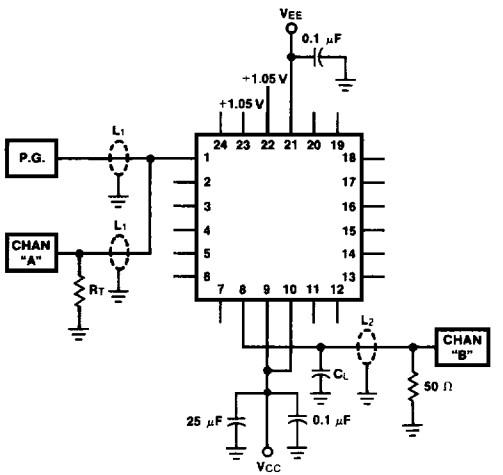
SYMBOL	CHARACTERISTIC	LIMITS			UNITS	CONDITIONS
		B	TYP	A		
I_{IH}	Input Current HIGH S_n A_n, B_n			 265 340	 μA	 $V_{IN} = V_{IHA}$
C_I	Input Capacitance S_n A_n, B_n			 4.0 6.0	 pF	
I_{EE}	Supply Current	-153	-109	-76	mA	Inputs Open

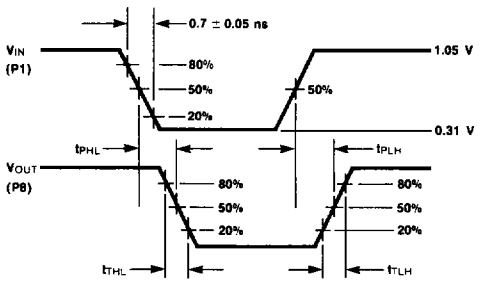
AC CHARACTERISTICS: T_A = 25°C, V_{EE} = -4.5V, V_{CC} = GND

SYMBOL	CHARACTERISTIC	LIMITS			UNITS	CONDITIONS
		B	TYP	A		
t_{PHL} t_{PLH}	Propagation Delay, Data to Output	0.08	1.30	1.70	ns	Figure 1
t_{PHL} t_{PLH}	Propagation Delay Select to Output	1.50	1.95	2.60	ns	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	0.70	1.20	1.70	ns	

NOTE: These limits apply to the flatpak. Add 200 ps to maximum limit propagation delays for the DIP package.

SWITCHING TEST CIRCUIT AND WAVEFORMS





L_1 and L_2 = equal length 50 Ω impedance lines
R_T equal 50 Ω termination of scope
Decoupling 0.1 μF from GND to V_{CC} and V_{EE}
All outputs are loaded with 50 Ω to GND
C_L = Jig and stray capacitance ≤ 3 pF

Fig 1

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