

F100163 Dual 8-Input Multiplexer

F100K ECL Product

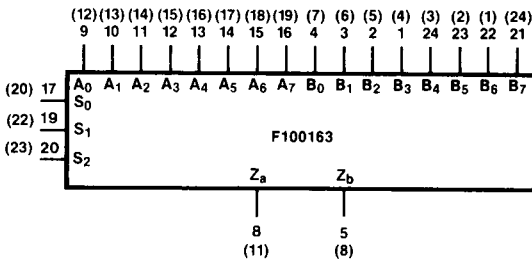
Description

The F100163 is a dual 8-input multiplexer. The Data Select (S_n) inputs determine which bit (A_n and B_n) 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

$S_0 - S_2$ Data Select Inputs
 $A_0 - A_7$ A Data Inputs
 $B_0 - B_7$ B Data Inputs
 Z_a, Z_b Data Outputs

Logic Symbol



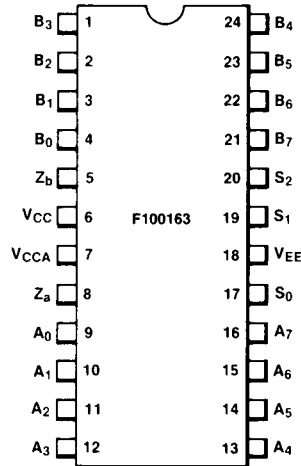
V_{CC} = Pin 6 (9)
 V_{CCA} = Pin 7 (10)
 V_{EE} = Pin 18 (21)
 () = Flatpak

Ordering Information

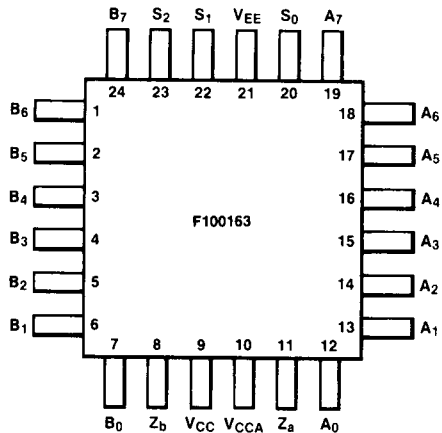
Package	Outline	Order Code
Ceramic DIP	6Y	DC
Flatpak	4V	FC

Connection Diagrams

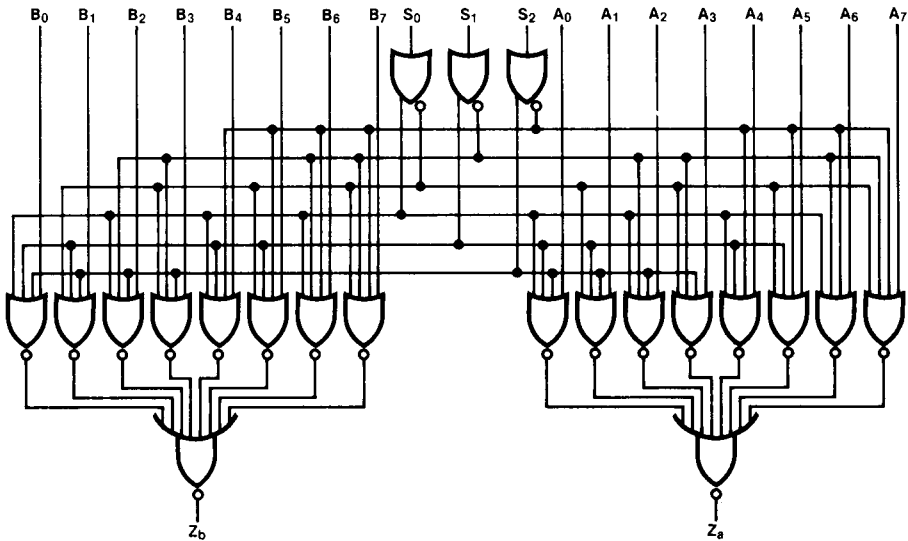
24-Pin DIP (Top View)



24-Pin Flatpak (Top View)



Logic Diagram



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Truth Table

Inputs										Outputs	
Select			Data							Z _a	Z _b
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		
L	L	L								L	L
L	L	L								H	H
L	L	H							L		L
L	L	H							H		H
L	H	L						L			L
L	H	L						H			H
L	H	H					L				L
L	H	H					H				H
H	L	L				L					L
H	L	L				H					H
H	L	H			L						L
H	L	H			H						H
H	H	L		L							L
H	H	L		H							H
H	H	H	L								L
H	H	H	H								H

H = HIGH Voltage Level
 L = LOW Voltage Level
 Blank = X = Don't Care

F100163

DC Characteristics: $V_{EE} = -4.2\text{ V to }-4.8\text{ V}$ unless otherwise specified, $V_{CC} = V_{CCA} = \text{GND}$, $T_C = 0^\circ\text{C to }+85^\circ\text{C}$ *

Symbol	Characteristic	Min	Typ	Max	Unit	Condition
I_{IH}	Input HIGH Current S_n A_n, B_n			265 340	μA	$V_{IN} = V_{IH(max)}$
I_{EE}	Power Supply Current	-153	-110	-76	mA	Inputs Open

Ceramic Dual In-line Package AC Characteristics: $V_{EE} = -4.2\text{ V to }-4.8\text{ V}$, $V_{CC} = V_{CCA} = \text{GND}$

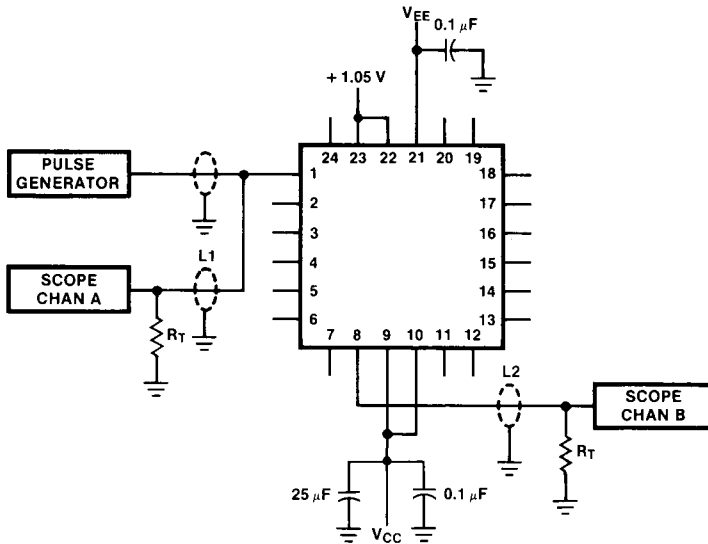
Symbol	Characteristic	$T_C = 0^\circ\text{C}$		$T_C = +25^\circ\text{C}$		$T_C = +85^\circ\text{C}$		Unit	Condition
		Min	Max	Min	Max	Min	Max		
t_{PLH} t_{PHL}	Propagation Delay A_0-A_7, B_0-B_7 to Output	0.55	1.65	0.60	1.70	0.65	1.80	ns	<i>Figures 1 and 2</i>
t_{PLH} t_{PHL}	Propagation Delay S_0-S_2 to Output	1.10	2.80	1.10	2.80	1.20	3.10	ns	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	0.50	1.85	0.55	1.80	0.50	1.80	ns	

Flatpak AC Characteristics: $V_{EE} = -4.2\text{ V to }-4.8\text{ V}$, $V_{CC} = V_{CCA} = \text{GND}$

Symbol	Characteristic	$T_C = 0^\circ\text{C}$		$T_C = +25^\circ\text{C}$		$T_C = +85^\circ\text{C}$		Unit	Condition
		Min	Max	Min	Max	Min	Max		
t_{PLH} t_{PHL}	Propagation Delay A_0-A_7, B_0-B_7 to Output	0.55	1.45	0.60	1.50	0.65	1.60	ns	<i>Figures 1 and 2</i>
t_{PLH} t_{PHL}	Propagation Delay S_0-S_2 to Output	1.10	2.60	1.10	2.60	1.20	2.90	ns	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	0.50	1.75	0.55	1.70	0.50	1.70	ns	

*See Family Characteristics for other dc specifications.

Fig. 1 AC Test Circuit



Notes

- V_{CC}, V_{CCA} = +2 V, V_{EE} = -2.5 V
- L1 and L2 = equal length 50 Ω impedance lines
- R_T = 50 Ω terminator internal to scope
- Decoupling 0.1 μF from GND to V_{CC} and V_{EE}
- All unused outputs are loaded with 50 Ω to GND
- C_L = Fixture and stray capacitance ≤ 3 pF
- Pin numbers shown are for flatpak; for DIP see logic symbol

Fig. 2 Propagation Delay and Transition Times

