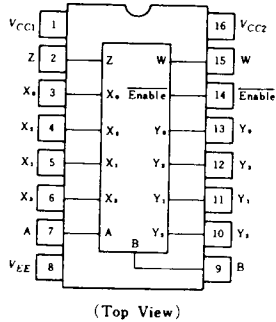


HD10174

Dual 4 to 1 Multiplexers

PIN ARRANGEMENT

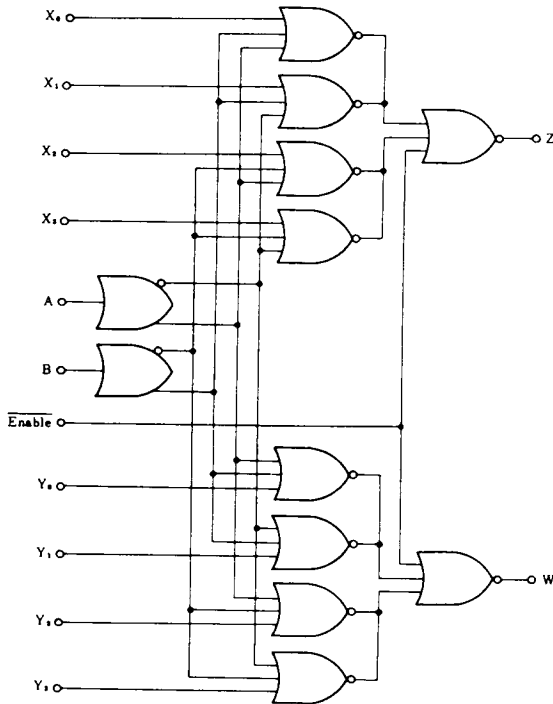


FUNCTION TABLE

Enable	Address Inputs		Outputs	
Enable	B	A	Z	W
H	×	×	L	L
L	L	L	X ₀	Y ₀
L	L	H	X ₁	Y ₁
L	H	L	X ₂	Y ₂
L	H	H	X ₃	Y ₃

× : Don't Care

BLOCK DIAGRAM



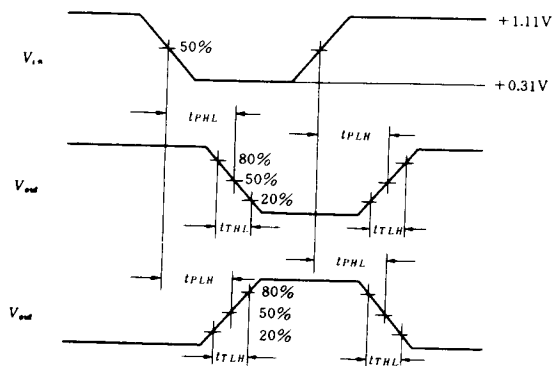
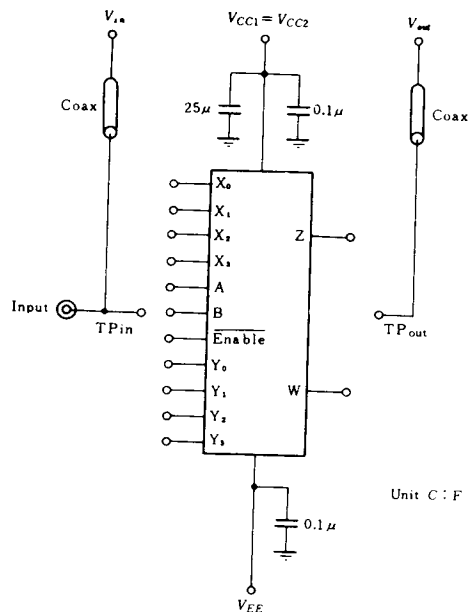
■ DC CHARACTERISTICS ($V_{EE} = -5.2\text{V}$, $T_a = -30 \sim +85^\circ\text{C}$)

Item	Symbol	Test Condition		min	typ	max	Unit
Supply Current	I_{EE}			25°C	—	58	mA
Input Current	I_{IH}	$V_{IH} = -0.810\text{V}$	Data	25°C	—	220	μA
			Enable	—	—	330	
	I_{IL}	$V_{IL} = -1.850\text{V}$		25°C	0.5	—	μA
Output Voltage	V_{OH}	$V_{IH} = -0.890\text{V}$ or $V_{IL} = -1.890\text{V}$		-30°C	-1.060	—	V
		$V_{IH} = -0.810\text{V}$ or $V_{IL} = -1.850\text{V}$		25°C	-0.960	—	
		$V_{IH} = -0.700\text{V}$ or $V_{IL} = -1.825\text{V}$		85°C	-0.890	—	
	V_{OL}	$V_{IL} = -1.890\text{V}$ or $V_{IH} = -0.890\text{V}$		-30°C	-1.890	—	V
		$V_{IL} = -1.850\text{V}$ or $V_{IH} = -0.810\text{V}$		25°C	-1.850	—	
		$V_{IL} = -1.825\text{V}$ or $V_{IH} = -0.700\text{V}$		85°C	-1.825	—	
Output Threshold Voltage	V_{OHA}	$V_{IHA} = -1.205\text{V}$ or $V_{ILA} = -1.500\text{V}$		-30°C	-1.080	—	V
		$V_{IHA} = -1.105\text{V}$ or $V_{ILA} = -1.475\text{V}$		25°C	-0.980	—	
		$V_{IHA} = -1.035\text{V}$ or $V_{ILA} = -1.440\text{V}$		85°C	-0.910	—	
	V_{OLA}	$V_{ILA} = -1.500\text{V}$ or $V_{IHA} = -1.205\text{V}$		-30°C	—	—	V
		$V_{ILA} = -1.475\text{V}$ or $V_{IHA} = -1.105\text{V}$		25°C	—	—	
		$V_{ILA} = -1.440\text{V}$ or $V_{IHA} = -1.035\text{V}$		85°C	—	—	

■ AC CHARACTERISTICS ($V_{EE} = -3.2\text{V}$, $V_{CC} = +2.0\text{V}$, $T_a = -30 \sim +85^\circ\text{C}$.)

Item	Symbol	Input	Output	Test Condition	min	typ	max	Unit
Propagation Delay Time	t_{PLH}	Data	Z, W	-30°C	1.4	—	4.8	ns
				25°C	1.5	3.5	4.5	
				85°C	1.4	—	4.8	
	t_{PHL}	Data	Z, W	-30°C	1.4	—	4.8	ns
				25°C	1.5	3.5	4.5	
				85°C	1.4	—	4.8	
	t_{PLH}	Address	Z, W	-30°C	1.9	—	6.4	ns
				25°C	2.0	5.0	6.0	
				85°C	2.1	—	6.4	
	t_{PHL}	Address	Z, W	-30°C	1.9	—	6.4	ns
				25°C	2.0	5.0	6.0	
				85°C	2.1	—	6.4	
Rise Time	t_{PLH}	Enable	Z, W	-30°C	1.0	—	3.1	ns
				25°C	1.0	2.0	2.9	
				85°C	0.9	—	3.2	
	t_{PHL}	Enable	Z, W	-30°C	1.0	—	3.1	ns
				25°C	1.0	2.0	2.9	
				85°C	0.9	—	3.2	
Fall Time	t_{TLH}		Z, W	-30°C	1.0	—	3.4	ns
				25°C	1.1	2.0	3.3	
				85°C	1.1	—	3.6	
				-30°C	1.0	—	3.4	
	t_{THL}		Z, W	25°C	1.1	2.0	3.3	ns
				85°C	1.1	—	3.6	

■ SWITCHING TIME TEST CIRCUIT



- Notes)
1. 50Ω termination to ground located in each scope channel input. All input and output cables to the scope are equal lengths of 50Ω coaxial cable.
 2. Wire length should be $<6.35\text{mm}$ (1/4 inch) from TPin to input pin TPout to output pin.
 3. Unused outputs connected to a 50Ω resistor to ground.