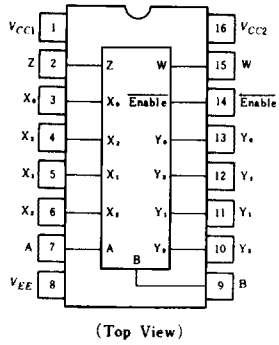


HD10174

Dual 4 to 1 Multiplexers

■ PIN ARRANGEMENT

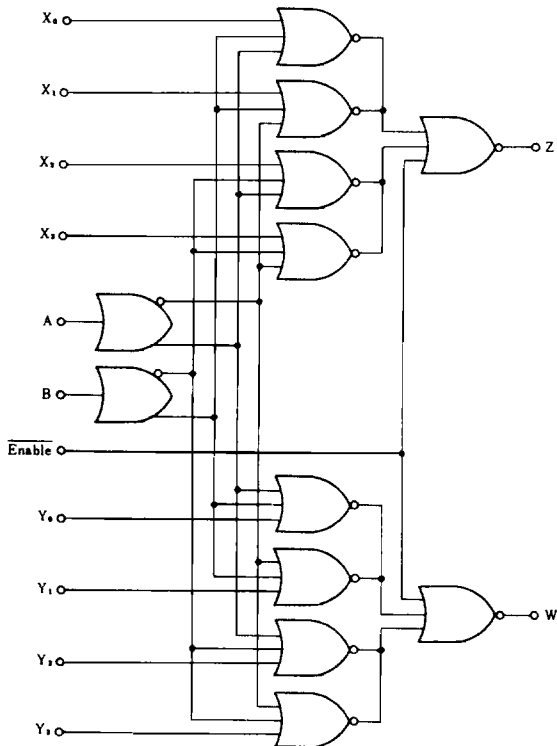


■ FUNCTION TABLE

Enable	Address Inputs		Outputs	
$\overline{\text{Enable}}$	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



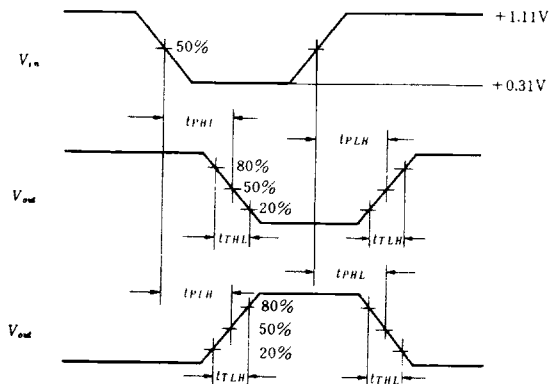
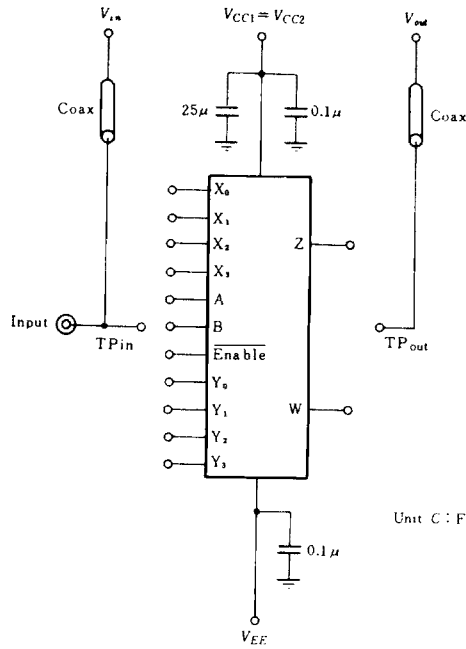
■ DC CHARACTERISTICS ($V_{EE} = -5.2V$, $T_a = -30 \sim +85^\circ C$)

Item	Symbol	Test Condition		min	typ	max	Unit
Supply Current	I_{EE}			25°C	—	58	73 mA
Input Current	I_{IH}	$V_{IH} = -0.810V$	Data	25°C	—	—	220 μA
			Enable		—	—	330 μA
	I_{IL}	$V_{IL} = -1.850V$		25°C	0.5	—	μA
Output Voltage	V_{OH}	$V_{IH} = -0.890V$ or $V_{IL} = -1.890V$		-30°C	-1.060	—	-0.890 V
		$V_{IH} = -0.810V$ or $V_{IL} = -1.850V$		25°C	-0.960	—	-0.810 V
		$V_{IH} = -0.700V$ or $V_{IL} = -1.825V$		85°C	-0.890	—	-0.700 V
	V_{OL}	$V_{IL} = -1.890V$ or $V_{IH} = -0.890V$		-30°C	-1.890	—	-1.675 V
		$V_{IL} = -1.850V$ or $V_{IH} = -0.810V$		25°C	-1.850	—	-1.650 V
		$V_{IL} = -1.825V$ or $V_{IH} = -0.700V$		85°C	-1.825	—	-1.615 V
Output Threshold Voltage	V_{OHA}	$V_{IHA} = -1.205V$ or $V_{ILA} = -1.500V$		-30°C	-1.080	—	— V
		$V_{IHA} = -1.105V$ or $V_{ILA} = -1.475V$		25°C	-0.980	—	— V
		$V_{IHA} = -1.035V$ or $V_{ILA} = -1.440V$		85°C	-0.910	—	— V
	V_{OLA}	$V_{ILA} = -1.500V$ or $V_{IHA} = -1.205V$		-30°C	—	—	-1.655 V
		$V_{ILA} = -1.475V$ or $V_{IHA} = -1.105V$		25°C	—	—	-1.630 V
		$V_{ILA} = -1.440V$ or $V_{IHA} = -1.035V$		85°C	—	—	-1.595 V

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

Item	Symbol	Input	Output	Test Condition	min	typ	max	Unit		
Propagation Delay Time	t_{PLH}	Data	Z, W	$R_L = 50\Omega$	-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		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		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		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_{PHL}	Enable	Z, W	-30°C	1.0	—	3.4	ns		
				25°C	1.1	2.0	3.3			
				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 <6.35mm (1/4 inch) from TPin to input pin TPout to output pin.
 3. Unused outputs connected to a 50Ω resistor to ground.