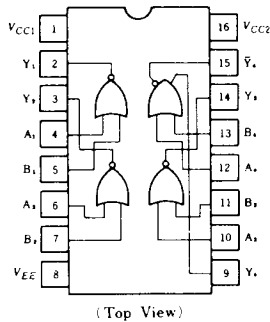


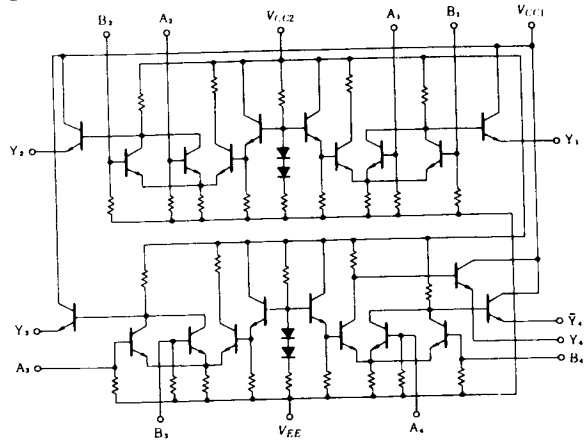
HD10102

Quadruple 2-input NOR Gates

■PIN ARRANGEMENT



■CIRCUIT SCHEMATIC



■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	—	20	26	mA	
Input Current		I_{IH}	$V_{IH} = -0.810\text{V}$	25°C	—	265	μA	
		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	—	-0.890	V
			$V_{IH} = -0.810\text{V}$ or $V_{IL} = -1.850\text{V}$	25°C	-0.960	—	-0.810	
			$V_{IH} = -0.700\text{V}$ or $V_{IL} = -1.825\text{V}$	85°C	-0.890	—	-0.700	
		V_{OL}	$V_{IL} = -1.890\text{V}$ or $V_{IH} = -0.890\text{V}$	-30°C	-1.890	—	-1.675	V
			$V_{IL} = -1.850\text{V}$ or $V_{IH} = -0.810\text{V}$	25°C	-1.850	—	-1.650	
			$V_{IL} = -1.825\text{V}$ or $V_{IH} = -0.700\text{V}$	85°C	-1.825	—	-1.615	
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	—	—	-1.655	V
			$V_{ILA} = -1.475\text{V}$ or $V_{IHA} = -1.105\text{V}$	25°C	—	—	-1.630	
			$V_{ILA} = -1.440\text{V}$ or $V_{IHA} = -1.035\text{V}$	85°C	—	—	-1.595	

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

TAC CHARACTERISTICS (V _{EE} = -3.2V, V _{CC} = 2.0V, I _B = 0.1mA)							
Item	Symbol	Test Condition		min	typ	max	Unit
Propagation Delay Time	t _{PLH}	R _L = 50Ω	-30°C	1.0	—	3.1	ns
			25°C	1.0	2.0	2.9	
			85°C	1.0	—	3.3	
	t _{PHL}		-30°C	1.0	—	3.1	ns
			25°C	1.0	2.0	2.9	
			85°C	1.0	—	3.3	
Rise/Fall Time	t _{TLH}		-30°C	1.1	—	3.6	ns
			25°C	1.1	2.0	3.3	
			85°C	1.1	—	3.7	
	t _{THL}		-30°C	1.1	—	3.6	ns
			25°C	1.1	2.0	3.3	
			85°C	1.1	—	3.7	

Note: Please refer to test circuit and waveform of common item.

