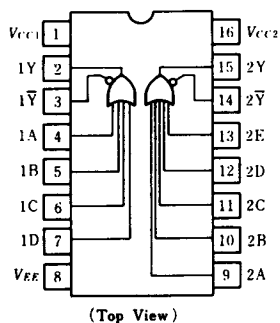


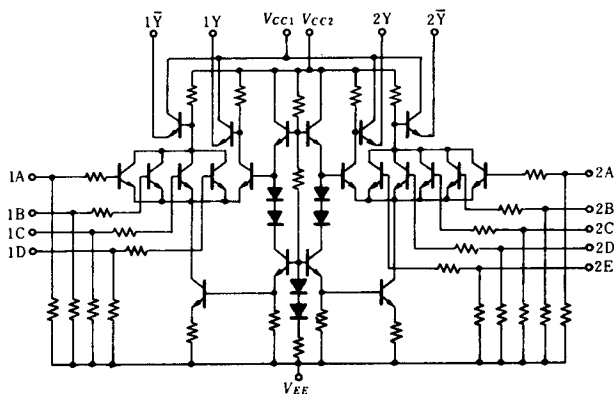
HD10209

Dual 4-5-input OR/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	—	11	14	mA	
Input Current	I_{IH}	$V_{IH} = -0.810V$	—	—	265	μA	
	I_{IL}	$V_{IL} = -1.850V$	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	
		$V_{IH} = -0.700V$ or $V_{IL} = -1.825V$	85°C	−0.890	—	−0.700	
	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	
		$V_{IL} = -1.825V$ or $V_{IH} = -0.700V$	85°C	−1.825	—	−1.615	
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	—	—	
		$V_{IHA} = -1.035V$ or $V_{ILA} = -1.440V$	85°C	−0.910	—	—	
	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	
		$V_{ILA} = -1.440V$ or $V_{IHA} = -1.035V$	85°C	—	—	−1.595	

AC CHARACTERISTICS ($V_{EE} = -3.2V$, $V_{CC} = +2.0V$, $T_a = 25^\circ C$)

Item	Symbol	Test Condition	min	typ	max	Unit
Propagation Delay Time	t_{PLH}	$R_L = 50\Omega$	0.95	—	1.55	ns
	t_{PHL}		0.95	—	1.55	
Rise/Fall Time	t_{TLH}		0.90	—	2.50	
	t_{THL}		0.90	—	2.50	

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