

HD74HC677 ● 16-bit Address Comparator

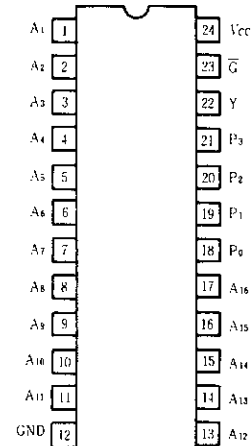
The HD74HC677 address comparator simplifies addressing of memory boards and/or other peripheral devices. The four P inputs are normally hard wired with a preprogrammed address. An internal decoder determines what input information applied to the 16 A inputs must be low or high to cause a low state at the output (Y). For example, a positive-logic bit combination of 0111 (decimal 7) at the P input determines that inputs A₁ through A₇ must be low and that inputs A₈ through A₁₆ must be high to cause the output to go low. Equality of the address applied at the A inputs to the preprogrammed address is indicated by the output being low.

The HD74HC677 features an enable input (G). When G is low, the device is enabled. When G is high, the device is disabled and the output is high regardless of the A and P inputs.

■ FEATURES

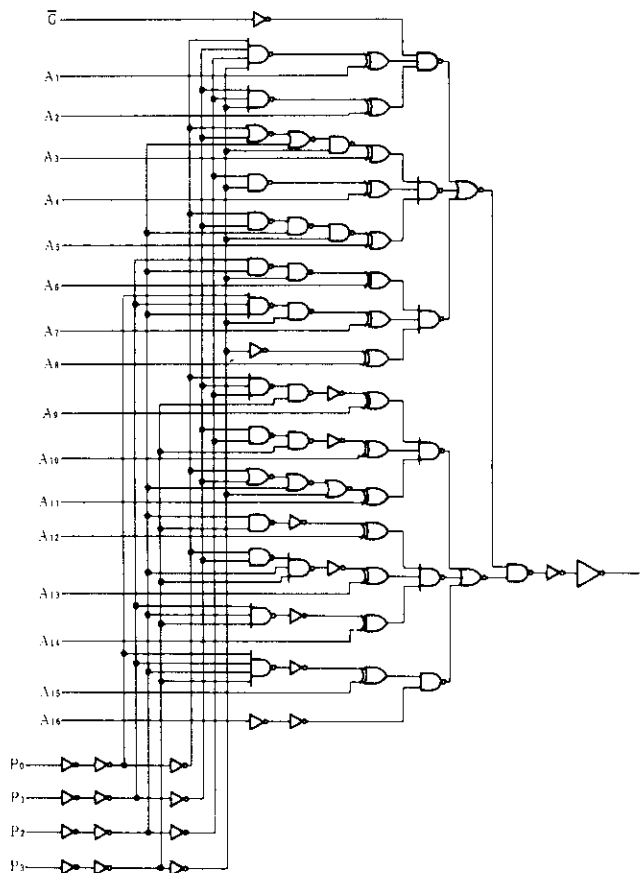
- High Speed Operation: t_{pd} (A to Y)=17ns typ. (C_L=50pF)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage: V_{CC}=2~6V
- Low Input Current: 1μA max.
- Low Quiescent Supply Current: I_{CC} (static)=4μA max. (T_a=25°C)

■ PIN ARRANGEMENT



(Top View)

■ LOGIC DIAGRAM



■ FUNCTION TABLE

[illegible]

■ DC CHARACTERISTICS

Item	Symbol	$V_{CC}(V)$	Test Conditions		$T_a=25^{\circ}C$			$T_a=-40\sim+85^{\circ}C$		Unit	
					min	typ	max	min	max		
Input Voltage	V_{IH}	2.0			1.5	—	—	1.5	—	V	
		4.5			3.15	—	—	3.15	—		
		6.0			4.2	—	—	4.2	—		
	V_{IL}	2.0			—	—	0.5	—	0.5	V	
		4.5			—	—	1.35	—	1.35		
		6.0			—	—	1.8	—	1.8		
Output Voltage	V_{OH}	2.0	$V_{IH}=V_{IH} \text{ or } V_{IL}$	$I_{OH}=-20\mu A$	1.9	2.0	—	1.9	—	V	
		4.5			4.4	4.5	—	4.4	—		
		6.0			5.9	6.0	—	5.9	—		
		4.5		$I_{OH}=-4mA$		4.18	—	—	4.13		—
		6.0		$I_{OH}=-5.2mA$		5.68	—	—	5.63		—
	V_{OL}	2.0	$V_{IL}=V_{IH} \text{ or } V_{IL}$	$I_{OL}=20\mu A$	—	0.0	0.1	—	0.1	V	
		4.5			—	0.0	0.1	—	0.1		
		6.0			—	0.0	0.1	—	0.1		
		4.5		$I_{OL}=4mA$		—	—	0.26	—		0.33
		6.0		$I_{OL}=5.2mA$		—	—	0.26	—		0.33
Input Current	I_{ix}	6.0	$V_{ix}=V_{CC} \text{ or } GND$		—	—	± 0.1	—	± 1.0	μA	
Quiescent Supply Current	I_{CC}	6.0	$V_{ix}=V_{CC} \text{ or } GND, I_{out}=0\mu A$		—	—	4.0	—	40	μA	

■ AC CHARACTERISTICS ($C_L = 50\text{pF}$, Input $t_r = t_f = 6\text{ns}$)

Item	Symbol	$V_{CC}(\text{V})$	Test Conditions	$T_a = 25^\circ\text{C}$			$T_a = -40 \sim +85^\circ\text{C}$		Unit
				min.	typ.	max.	min.	max.	
Propagation Delay Time	t_{PLH} t_{PHL}	2.0	P to Y	—	—	310	—	390	ns
		4.5		—	23	62	—	78	
		6.0		—	—	52	—	66	
	t_{PLH} t_{PHL}	2.0	A to Y	—	—	180	—	225	ns
		4.5		—	17	36	—	45	
		6.0		—	—	31	—	38	
	t_{PLH} t_{PHL}	2.0	\bar{G} to Y	—	—	125	—	155	ns
		4.5		—	13	25	—	31	
		6.0		—	—	21	—	26	
Output Rise/Fall Time	t_{TLH} t_{THL}	2.0		—	—	75	—	95	ns
		4.5		—	5	15	—	19	
		6.0		—	—	13	—	16	
Input Capacitance	C_{in}	—		—	5	10	—	10	pF