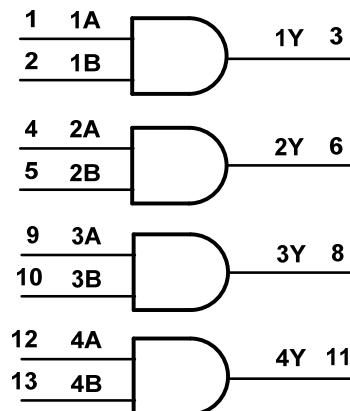


Pin Descriptions

Pin Number	Pin Name	Function
1	1A	Data Input
2	1B	Data Input
3	1Y	Data Output
4	2A	Data Input
5	2B	Data Input
6	2Y	Data Output
7	GND	Ground
8	3Y	Data Output
9	3A	Data Input
10	3B	Data Input
11	4Y	Data Output
12	4A	Data Input
13	4B	Data Input
14	V _{CC}	Supply Voltage

Logic Diagram



Function Table

Inputs		Output
A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

Absolute Maximum Ratings (Note 4) (@T_A = +25°C, unless otherwise specified.)

Symbol	Description	Rating	Unit
ESD HBM	Human Body Model ESD Protection	2	KV
ESD CDM	Charged Device Model ESD Protection	1	KV
ESD MM	Machine Model ESD Protection	200	V
V _{CC}	Supply Voltage Range	-0.5 to +7.0	V
V _I	Input Voltage Range	-0.5 to +7.0	V
I _{IK}	Input Clamp Current V _I < -0.5V	-20	mA
I _{OK}	Output Clamp Current V _O < 0V	-20	mA
I _{OK}	Output Clamp Current V _O > V _{CC}	20	mA
I _O	Continuous Output current 0V < V _O < V _C	+/- 25	mA
I _{CC}	Continuous Current Through V _{CC}	50	mA
I _{GND}	Continuous Current Through GND	-50	mA
T _J	Operating Junction Temperature	-40 to +150	°C
T _{STG}	Storage Temperature	-65 to +150	°C
P _{TOT}	Total Power Dissipation	500	mW

Note: 4. Stresses beyond the absolute maximum may result in immediate failure or reduced reliability. These are stress values and device operation should be within recommend values.

Recommended Operating Conditions (Note 5) (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Min	Max	Unit
V _{CC}	Supply Voltage	4.5	5.5	V
V _I	Input Voltage	0	5.5	V
V _O	Output Voltage	0	V _{CC}	V
Δt/ΔV	Input transition rise or fall rate		20	ns/V
T _A	Operating Free-Air Temperature	-40	+125	°C

Note: 5. Unused inputs should be held at V_{CC} or Ground.

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V _{CC}	T _A = -40°C to +85°C		T _A = -40°C to +125°C		Unit
				Min	Max	Min	Max	
V _{IH}	High-Level Input Voltage		4.5V to 5.5V	2.0		2.0		V
V _{IL}	Low-Level Input Voltage		4.5V to 5.5V		0.8		0.8	V
V _{OH}	High-Level Output Voltage	I _{OH} = -50μA	4.5V	4.4		4.4		V
		I _{OH} = -8mA	4.5V	3.80		3.70		
V _{OL}	Low-Level Output Voltage	I _{OL} = 50μA	4.5V		0.1		0.1	V
		I _{OL} = 8mA	4.5V		0.44		0.55	
I _I	Input Current	V _I = GND to 5.5V	3.6V		±1		±2	μA
I _{CC}	Supply Current	V _I = GND or V _{CC} , I _O = 0	3.6V		20		40	μA
ΔI _{CC}	Additional Supply Current	One input at V _{CC} -2.1V Other pins at V _{CC} or GND	5.5V		1.35		5	mA

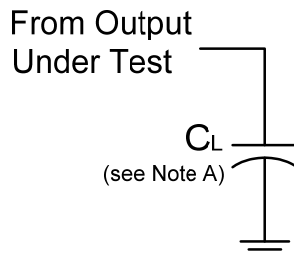
Operating Characteristics

Parameter		Test Conditions	V _{CC} = 5.5V	Unit
			Typ	
C _{pd}	Power Dissipation Capacitance per Gate	f = 1MHz	14.8	pF
C _i	Input Capacitance	V _I = V _{CC} – or GND	4.0	pF

Switching Characteristics

Symbol	Parameter	Test Conditions	V _{CC}	T _A = +25°C			-40°C to +85°C		-40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t _{PD}	Propagation Delay A _N to Y _N	Figure 1 C _L = 15pF	4.5V to 5.5V	0.5	3.4	6.9	0.5	8.0	0.5	9.0	ns
		Figure 1 C _L = 50pF	4.5V to 5.5V	0.5	4.9	10.0	0.5	10.0	0.5	11.0	

Parameter Measurement Information



V_{CC}	Inputs		V_M Inputs	V_M Outputs	C_L
	V_I	t_r/t_f			
4.5V to 5.5V	3.0V	3ns	1.5V	$V_{CC}/2$	15pF, 50pF

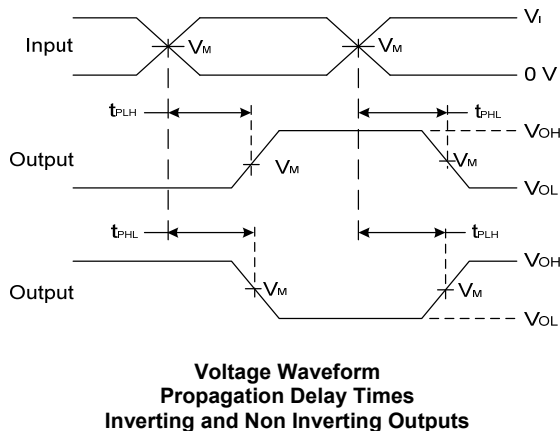
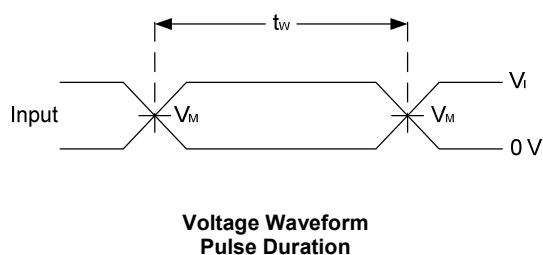
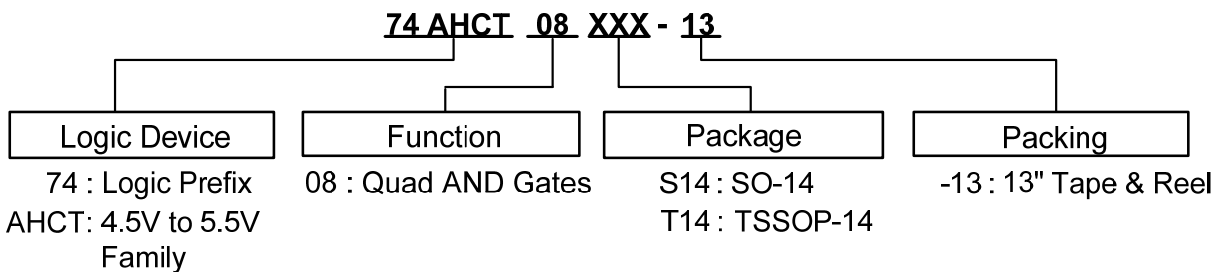


Figure 1 Load Circuit and Voltage Waveforms

- Notes:
- A. Includes test lead and test apparatus capacitance.
 - B. All pulses are supplied at pulse repetition rate ≤ 1 MHz.
 - C. Inputs are measured separately one transition per measurement.
 - D. t_{PLH} and t_{PHL} are the same as t_{PD} .

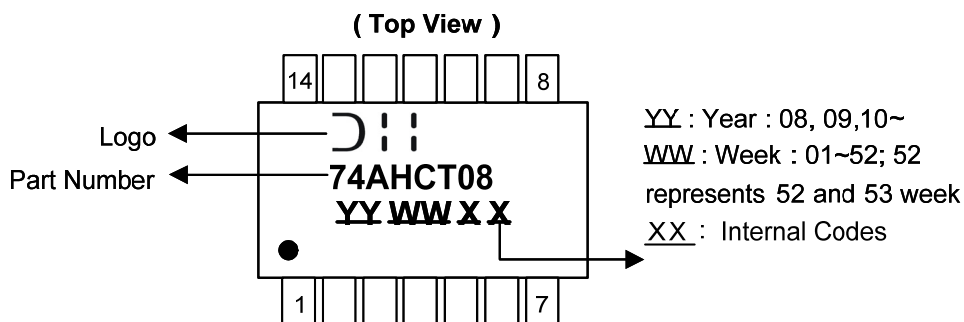
Ordering Information



Part Number	Package Code	Packaging	7" Tape and Reel	
			Quantity	Part Number Suffix
74AHCT08S14-13	S14	SO-14	2500/Tape & Reel	-13
74AHCT08T14-13	T14	TSSOP-14	2500/Tape & Reel	-13

Marking Information

(1) SO-14, TSSOP-14

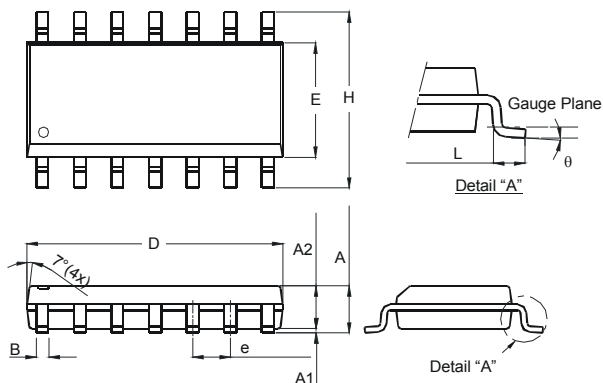


Part Number	Package
74AHCT08S14	SO-14
74AHCT08T14	TSSOP-14

Package Outline Dimensions (All dimensions in mm.)

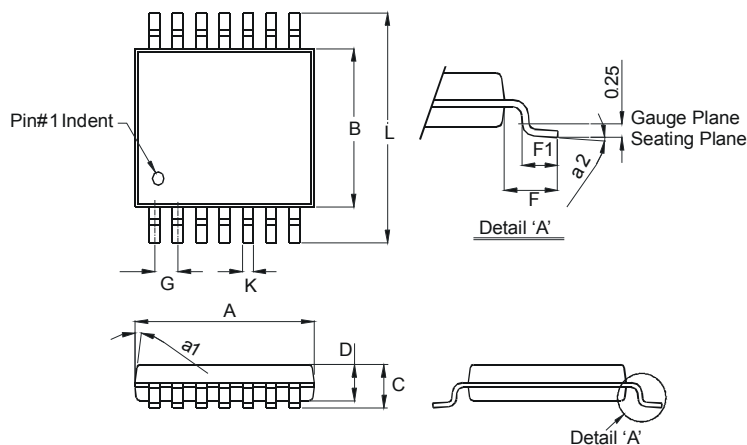
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

Package Type: SO-14



SO-14		
Dim	Min	Max
A	1.47	1.73
A1	0.10	0.25
A2	1.45 Typ	
B	0.33	0.51
D	8.53	8.74
E	3.80	3.99
e	1.27 Typ	
H	5.80	6.20
L	0.38	1.27
θ	0°	8°
All Dimensions in mm		

Package Type: TSSOP-14

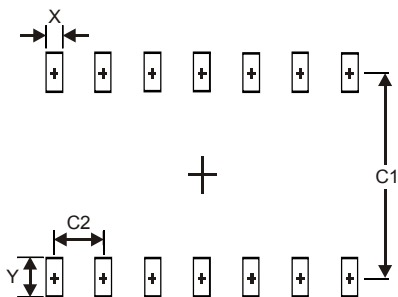


TSSOP-14		
Dim	Min	Max
a1	7° (4X)	
a2	0°	8°
A	4.9	5.10
B	4.30	4.50
C	—	1.2
D	0.8	1.05
F	1.00 Typ	
F1	0.45	0.75
G	0.65 Typ	
K	0.19	0.30
L	6.40 Typ	
All Dimensions in mm		

Suggested Pad Layout

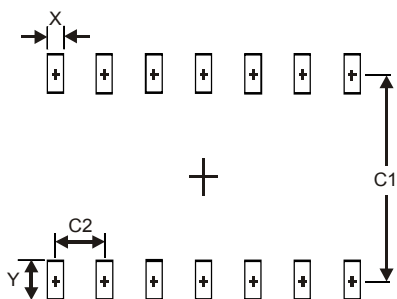
Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

Package Type: SO-14



Dimensions	Value (in mm)
X	0.60
Y	1.50
C1	5.4
C2	1.27

Package Type: TSSOP-14



Dimensions	Value (in mm)
X	0.45
Y	1.45
C1	5.9
C2	0.65

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