



QUADRUPLE 3-STATE BUFFERS OE HIGH

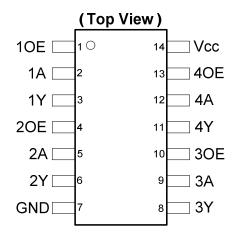
Description

The 74AHCT126 provides four independent buffer gates with 3-state outputs. Each buffer has a separate enable pin that if driven with a low logic level, places the corresponding output in the high impedance state. The device is designed for operation with a power supply range of 4.5V to 5.5V.

Features

- Wide Supply Voltage Range from 4.5V to 5.5V
- Inputs Are TTL Voltage Level Compatible
- Outputs Sink or Source 8mA at V_{CC} = 4.5V
- CMOS Low Power Consumption
- Schmitt Trigger Action at All Inputs
- ESD Protection Exceeds JESD 22
 - 200-V Machine Model (A115)
 - 2000-V Human Body Model (A114)
 - Exceeds 1000-V Charged Device Model (C101)
- Latch-Up Exceeds 250mA per JESD 78, Class II
- Range of Package Options SO-14 and TSSOP-14
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

Pin Assignments



SO-14 / TSSOP-14

Applications

- General Purpose Logic
- Wide Array of Products Such as:
 - PCs, Networking, Notebooks, Netbooks
 - Computer Peripherals, Hard Drives, CD/DVD ROMs
 - TVs, DVDs, DVRs, Set Top Boxes

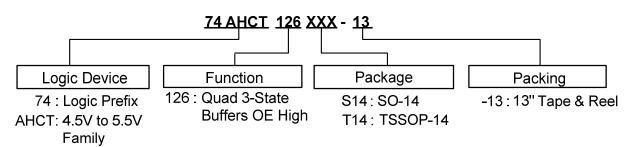
Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

2. See http://www.diodes.com for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.



Ordering Information



Part Number	Bookaga Coda	Dockoning	7" Tape	and Reel
Part Number	Package Code	Packaging	Quantity	Part Number Suffix
74AHCT126S14-13	S14	SO-14	2,500/Tape & Reel	-13
74AHCT126T14-13	T14	TSSOP-14	2,500/Tape & Reel	-13

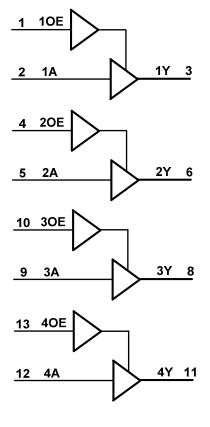
Pin Descriptions

Pin Number	Pin Name	Function
1	10E	Data Enable Input (active high)
2	1A	Data Input
3	1Y	Data Output
4	20E	Data Enable Input (active high)
5	2A	Data Input
6	2Y	Data Output
7	GND	Ground
8	3Y	Data Output
9	3A	Data Input
10	30E	Data Enable Input (active high)
11	4Y	Data Output
12	4A	Data Input
13	40E	Data Enable Input (active high)
14	Vcc	Supply Voltage

Function Table

Inp	Output	
OE	Α	Υ
Н	Н	Н
Н	L	L
L	X	Z

Logic Diagram





Absolute Maximum Ratings (Note 4) (T_A = +25 ℃, 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
VI	Input Voltage Range	-0.5 to +7.0	V
I _{IK}	Input Clamp Current V _I < -0.5V	-20	mA
lok	Output Clamp Current Vo < 0 V	-20	mA
lok	Output Clamp Current Vo > Vcc	20	mA
lo	Continuous Output Current 0V < V _O < V _{CC}	+/- 25	mA
I _{CC}	Continuous Current Through V _{CC}	50	mA
I _{GND}	Continuous Current Through GND	-50	mA
TJ	Operating Junction Temperature	-40 to +150	.€
T _{STG}	Storage Temperature	-65 to +150	℃
Ртот	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
VI	Input Voltage	0	5.5	V
Vo	Output Voltage	0	V _{CC}	V
Δt/ΔV	Input transition Rise or Fall Rate	-	20	ns/V
TA	Operating Free-Air Temperature	-40	+125	℃

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



Electrical Characteristics

Cumbal	Dawamatan	Took Conditions	Test Conditions		C to +85℃	T _A = -40°C	Unit	
Symbol	Parameter	Test Conditions	Vcc	Min	Max	Min	Max	Unit
V _{IH}	High-Level Input Voltage	-	4.5V to 5.5V	2.0	-	2.0	-	٧
V _{IL}	Low-Level Input Voltage	-	4.5V to 5.5V	-	0.8	-	0.8	V
V	High-Level Output	I _{OH} = -50μA	4.5V	4.4	-	4.4	-	V
V _{OH}	Voltage	I _{OH} = -8mA	4.5V	3.80	-	3.70	-	V
.,	Low-Level Output	I _{OL} = 50μA	4.5V	-	0.1	-	0.1	V
V _{OL}	Voltage	I _{OL} = 8mA	4.5V	-	0.44	-	0.55	V
l _{OZ}	Z State Leakage Current	V _O = 0 to 5.5V	5.5V	-	±2.5	-	±10	μA
l _l	Input Current	$V_I = GND$ to 5.5V	3.6V	-	±1	-	±2	μΑ
Icc	Supply Current	$V_I = GND \text{ or } V_{CC}, I_O = 0$	3.6V	-	20	-	40	μΑ
Δlcc	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

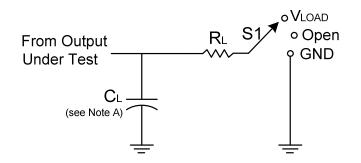
Parameter		Test	$V_{CC} = 5.5V$	Unit
		Conditions	Тур	Oilit
$C_{\sf pd}$	Power Dissipation Capacitance per Gate	f = 1MHz	14.8	pF
Ci	Input Capacitance	$V_i = V_{CC} - or$ GND	4.0	pF

Switching Characteristics (V_{CC} = 4.5V to 5.5V)

Symbol	Parameter	Test Conditions	T	A = +25°	С	-40℃ to	o +85°C	-40 ℃ to	+125℃	Unit
Syllibol	Parameter	rest Conditions	Min	Тур	Max	Min	Max	Min	Max	Ollit
	Dramanation Dalay A. to V	Figure 1 C _L = 15pF	0.5	3.0	5.5	0.5	6.5	0.5	7.0	
t _{PD}	Propagation Delay A _N to Y _N	Figure 1 C _L = 50pF	0.5	4.3	7.5	0.5	8.5	0.5	9.5	ns
	Enable Time OE _N to Y _N	Figure 1 C _L = 15 pF	0.5	3.3	5.1	0.5	6.0	0.5	6.5	20
t _{EN}	LINADIR TIME OLN TO TN	Figure 1 C _L = 50pF	0.5	4.7	7.1	0.5	8.0	0.5	9.0	ns
	Disable Time OE _N to Y _N	Figure 1 C _L = 15pF	0.5	4.8	6.8	0.5	8.0	0.5	8.5	20
t _{DIS} Disable Time OE _N to Y _N	DISADIE TITLE OLN TO TN	Figure 1 C _L = 50pF	0.5	6.5	8.9	0.5	10.0	0.5	11.5	ns

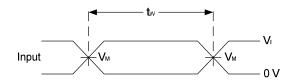


Parameter Measurement Information

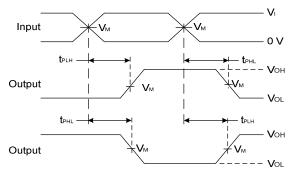


TEST	S1
tplh/tphl	Open
t _{PLZ} /t _{PZL}	Vload
t _{PHZ} /t _{PZH}	GND

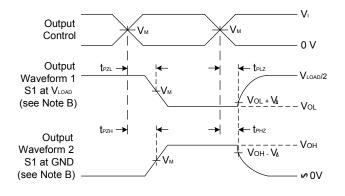
Voc	Inputs		V_{M}	V _M V _M	V	0	Б	V.
Vcc	VI	t _r /t _f	Inputs	Outputs	VLOAD	CL	KL	$\mathbf{V}\Delta$
4.5V to 5.5V	3 V	≤3ns	1.5 V	V _{CC} /2	V _{CC}	15pF, 50pF	1K	0.3V



Voltage Waveform Pulse Duration



Voltage Waveform Propagation Delay Times Inverting and Non Inverting Outputs



Voltage Waveform Enable and Disable Times Low and High Level Enabling

Figure 1. Load Circuit and Voltage Waveforms

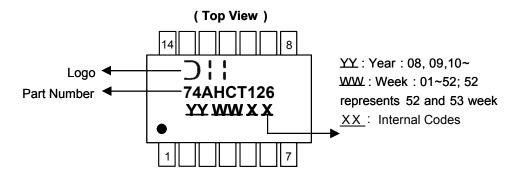
Notes: A. Includes test lead and test apparatus capacitance.

- B. All pulses are supplied at pulse repetition rate ≤ 1 MHz.
- C. Inputs are measured separately one transition per measurement.
- D. t_{PLZ} and t_{PHZ} are the same as t_{dis.}
- E. t_{PZL} and t_{PZH} are the same as t_{EN0}
- F. t_{PLH} and t_{PHL} are the same as $t_{PD.}$



Marking Information

(1) SO-14, TSSOP-14



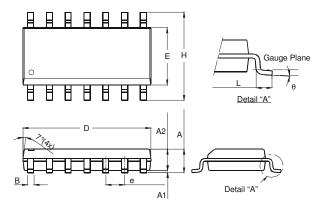
Part Number	Package
74AHCT126S14	SO-14
74AHCT126T14	TSSOP-14



Package Outline Dimensions (All dimensions in mm.)

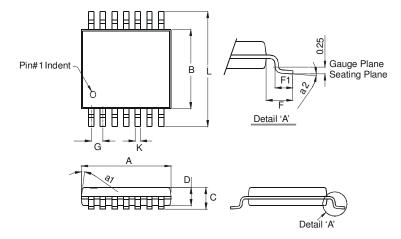
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

Package Type: SO-14



	SO-14			
Dim	Min	Max		
Α	1.47	1.73		
A 1	0.10	0.25		
A2	1.45	Тур		
В	0.33	0.51		
D	8.53	8.74		
Е	3.80	3.99		
е	1.27	Тур		
Н	5.80	6.20		
L	0.38	1.27		
θ	0° 8°			
All Din	nensions	in mm		

Package Type: TSSOP-14



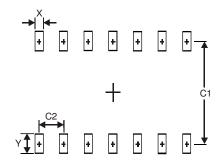
TSSOP-14			
Dim	Min	Max	
a1	7° (4X)		
a2	0°	8°	
Α	4.9	5.10	
В	4.30	4.50	
၁	_	1.2	
D	0.8	1.05	
F	1.00 Typ		
F1	0.45	0.75	
G	0.65 Typ		
K	0.19	0.30	
L	6.40 Typ		
All Dimensions in mm			



Suggested Pad Layout

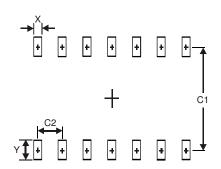
Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

Package Type: SO-14



Dimensions	Value (in mm)
Х	0.60
Υ	1.50
C1	5.4
C2	1.27

Package Type: TSSOP-14



Dimensions	Value (in mm)
Х	0.45
Υ	1.45
C1	5.9
C2	0.65



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