

HD74AC368

Hex Inverter Buffer with 3-State Output

REJ03D0272–0200Z (Previous ADE-205-393 (Z)) Rev.2.00 Jul.16.2004

Features

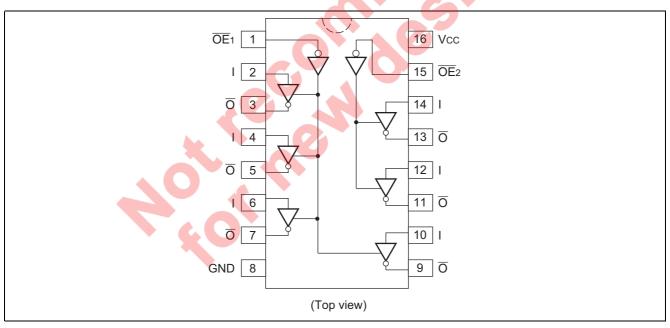
- 3-State Outputs Drive Bus Lines or Buffer Memory Address Registers
- Outputs Source/Sink 24 mA
- Ordering Information

Part Name	Package Type	Package Code	Package Abbreviation	Taping Abbreviation (Quantity)
HD74AC368FPEL	SOP-16 pin (JEITA)	FP-16DAV	FP	EL (2,000 pcs/reel)
HD74AC368RPEL	SOP-16 pin (JEDEC)	FP-16DNV	RP	EL (2,500 pcs/reel)

Notes: 1. Please consult the sales office for the above package availability.

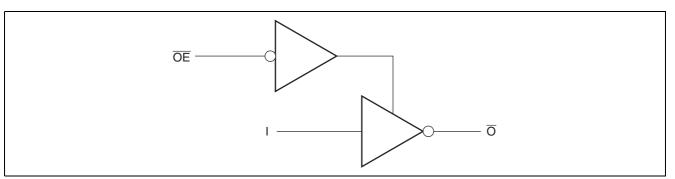
2. The packages with lead-free pins are distinguished from the conventional products by adding V at the end of the package code.

Pin Arrangement





Logic Symbol



Pin Names

\overline{OE} , \overline{OE}	3-State Output:	Enable Input (Active Low)
$\mathbf{OL}_1, \mathbf{OL}_2$	J-State Output.	Lindole input (Active Low)

- I Inputs
- 0 Outputs

Truth Table

Inputs				Output
ŌĒ		I		ō
L	L		н	
L	Н		L	
Н	Х		Z	
H : High Voltage Level	•			

- High Voltage Level L : Low Voltage Level
- X : Immaterial
- Z : High Impedance

Absolute Maximum Ratings

H X		Z									
H : High Voltage Level											
L : Low Voltage Level											
: Immaterial											
Z : High Impedance	High Impedance										
Absolute Maximum Ratings	G										
	Symbol	Potingo	Unit	Condition							
Item	Symbol	Ratings		Condition							
Supply voltage	V _{cc}	–0.5 to 7	V								
DC input diode current	I _{IK}	-20	mA	$V_{I} = -0.5V$							
		20	mA	$V_1 = Vcc+0.5V$							
DC input voltage	V	-0.5 to Vcc+0.5	V								
DC output diode current	I _{ок}	-50	mA	$V_{\rm O} = -0.5V$							
		50	mA	$V_{O} = Vcc+0.5V$							
DC output voltage	Vo	-0.5 to Vcc+0.5	V								
DC output source or sink current		±50	mA								
DC V_{cc} or ground current per output pin	$I_{\rm CC}, I_{\rm GND}$	±50	mA								
Storage temperature	Tstg	-65 to +150	°C								

Recommended Operating Conditions

Item	Symbol	Ratings	Unit	Condition	
Supply voltage	V _{cc}	2 to 6	V		
Input and Output voltage	V _I , V _O	0 to V _{cc}	V		
Operating temperature	Та	-40 to +85	°C		
Input rise and fall time	tr, tf	8	ns/V	$V_{CC} = 3.0V$	
(except Schmitt inputs)				$V_{cc} = 4.5 V$	
V_{IN} 30% to 70% V_{CC}				V _{cc} = 5.5 V	



DC Characteristics

ltem	Sym- bol	Vcc (V)	1	Га = 25°(C	Ta = -40 to +85°C		Unit	Condition
			min.	typ.	max.	min.	max.		
Input Voltage	V _{IH}	3.0	2.1	1.5	—	2.1	—	V	V_{OUT} = 0.1 V or V_{CC} –0.1 V
		4.5	3.15	2.25	—	3.15	—		
		5.5	3.85	2.75	—	3.85	—		
	V _{IL}	3.0	—	1.50	0.9	—	0.9		$V_{OUT} = 0.1 \text{ V or } V_{CC} - 0.1 \text{ V}$
		4.5		2.25	1.35	—	1.35		
		5.5	_	2.75	1.65	_	1.65		
Output voltage	V _{OH}	3.0	2.9	2.99	_	2.9	_	V	$V_{IN} = V_{IL} \text{ or } V_{IH}$
		4.5	4.4	4.49	_	4.4	_		$I_{OUT} = -50 \ \mu A$
		5.5	5.4	5.49	—	5.4	—		
		3.0	2.58	_	—	2.48	—		$V_{IN} = V_{IL} \text{ or } V_{IH}$ $I_{OH} = -12 \text{ mA}$
		4.5	3.94	_	—	3.80	—		I _{OH} = -24 mA
		5.5	4.94	_	—	4.80	—		I _{OH} = -24 mA
	V _{OL}	3.0	_	0.002	0.1	_	0.1		$V_{IN} = V_{IL} \text{ or } V_{IH}$
		4.5	_	0.001	0.1	—	0.1		I _{ουτ} = 50 μA
		5.5	—	0.001	0.1	—	0.1		
		3.0	_	—	0.32	—	0.37		$V_{IN} = V_{IL} \text{ or } V_{IH}$ $I_{OL} = 12 \text{ mA}$
		4.5	—	_	0.32	-	0.37		I _{oL} = 24 mA
		5.5	—	_	0.32		0.37		I _{oL} = 24 mA
Input leakage current	I _{IN}	5.5	_	—	±0.1		±1.0	μA	$V_{IN} = V_{CC}$ or GND
3 State current	I _{oz}	5.5	_		±0.5	-	±5.0	μA	$V_{IN(OE)} = V_{IL}, V_{IH}$
	02							•	$V_{IN} = V_{CC}$ or GND
									$V_{OUT} = V_{CC} \text{ or } GND$
Dynamic output	I _{OLD}	5.5	—		-	86	_	mA	$V_{OLD} = 1.1 V$
current*	I _{OHD}	5.5	-		-	-75	—	mA	V _{OHD} = 3.85 V
Quiescent supply current	I _{cc}	5.5	ZY	-	8.0	-	80	μA	$V_{IN} = V_{CC}$ or ground

*Maximum test duration 2.0 ms, one output loaded at a time.

AC Characteristics

		0	Ta = +25°C C _L = 50 pF			Ta = -40°C to +85°C C _L = 50 pF		
Item	Symbol	V _{cc} (V)* ¹	Min	Тур	Max	Min	Max	Unit
Propagation delay	t _{PLH}	3.3	1.0	7.0	9.0	1.0	10.0	ns
		5.0	1.0	5.0	7.0	1.0	7.5	
Propagation delay	t _{PHL}	3.3	1.0	7.0	9.0	1.0	10.0	ns
		5.0	1.0	4.5	7.0	1.0	7.5	
Enable time	t _{zH}	3.3	1.0	9.0	13.0	1.0	13.5	ns
		5.0	1.0	7.0	9.5	1.0	10.0	
Enable time	t _{zL}	3.3	1.0	10.0	12.5	1.0	13.5	ns
		5.0	1.0	7.5	10.0	1.0	10.5	
Disable time	t _{HZ}	3.3	1.0	9.5	12.0	1.0	12.5	ns
		5.0	1.0	7.5	10.0	1.0	10.5	
Disable time	t _{LZ}	3.3	1.0	9.0	12.5	1.0	13.5	ns
		5.0	1.0	7.0	10.0	1.0	10.5	

Note: 1. Voltage Range 3.3 is $3.3 \vee \pm 0.3 \vee$ Voltage Range 5.0 is 5.0 $\vee \pm 0.5 \vee$

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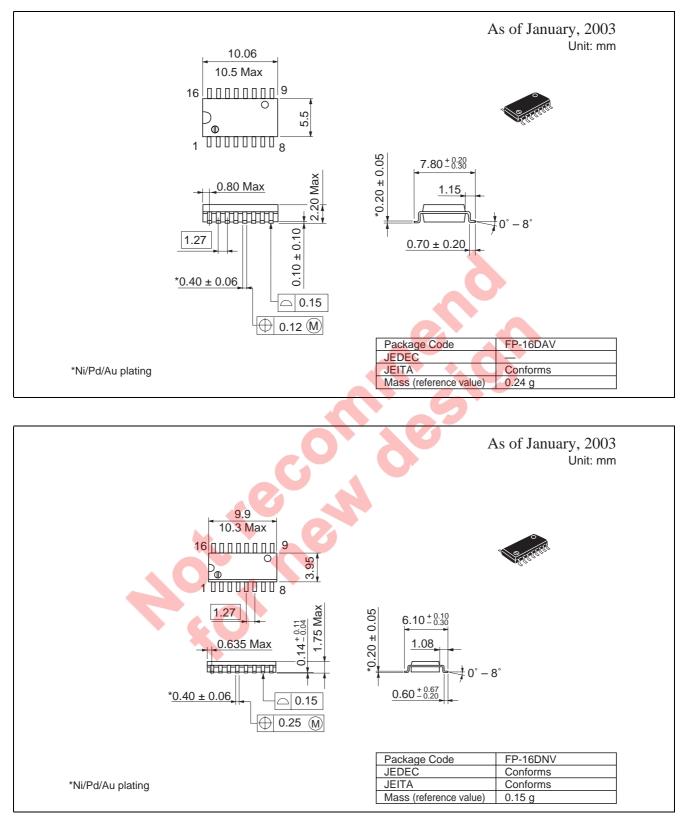
Capacitance

Item	Symbol	Тур	Unit	Condition
Input capacitance	C _{IN}	4.5	pF	$V_{\rm CC} = 5.5 \text{ V}$
Power dissipation capacitance	C _{PD}	40.0	pF	$V_{CC} = 5.0 V$





Package Dimensions





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