

April 1988 Revised August 1999

74F366•74F368 Hex Inverter Buffer with 3-STATE Outputs

Features

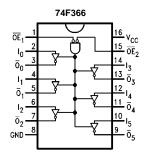
- 3-STATE buffer outputs sink 64 mA
- High-speed
- Bus-oriented
- High impedance npn base inputs for reduced loading

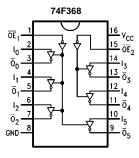
Ordering Code:

Order Number	Package Number	Package Description
74F366SC	M16A	16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
74F366PC	N16E	16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide
74F368SC	M16A	16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
74F368SJ	M16D	16-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
74F368PC	N16E	16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide

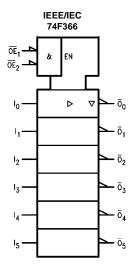
Devices also available in Tape and Reel. Specify by appending the suffix letter "X" to the ordering code.

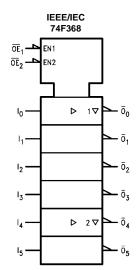
Connection Diagrams





Logic Symbols





Unit Loading/Fan Out

Din Name	December 1	U.L.	Input I _{IH} /I _{IL}	
Pin Names	Description	HIGH/LOW	Output I _{OH} /I _{OL}	
\overline{OE}_1 , \overline{OE}_2	Output Enable Input (Active LOW)	1.0/0.033	20 μΑ/–20 μΑ	
I _n	Input	1.0/0.033	20 μΑ/–20 μΑ	
O_n, \overline{O}_n	Outputs	600/106.6 (80)	-12 mA/64 mA (48 mA)	

Function Tables

74F366

Inputs			Output		
OE ₁	OE ₂	I	0		
L	L	L	Н		
L	L	Н	L		
Х	Н	Χ	Z		
Н	Χ	Χ	Z		

74F368

Inputs		Output
OE	ı	ю
L	L	Н
L	Н	L
Н	X	Z

 $L = LOW \ Voltage \ Level \qquad \ \ X = Immaterial$

H = HIGH Voltage Level Z = High Impedance

Absolute Maximum Ratings(Note 1)

Storage Temperature $-65^{\circ}C$ to $+150^{\circ}C$ Ambient Temperature under Bias $-55^{\circ}C$ to $+125^{\circ}C$ Junction Temperature under Bias -55°C to +150°C V_{CC} Pin Potential to Ground Pin -0.5V to +7.0V

Input Voltage (Note 2) -0.5V to +7.0V Input Current (Note 2) -30 mA to +5.0 mA

Voltage Applied to Output in HIGH State (with $V_{CC} = 0V$)

Standard Output -0.5 V to $V_{\mbox{\footnotesize CC}}$ 3-STATE Output -0.5V to +5.5V

Current Applied to Output

in LOW State (Max) twice the rated I_{OL} (mA)

Recommended Operating Conditions

0°C to +70°C Free Air Ambient Temperature +4.5V to +5.5V Supply Voltage

Note 1: Absolute maximum ratings are values beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

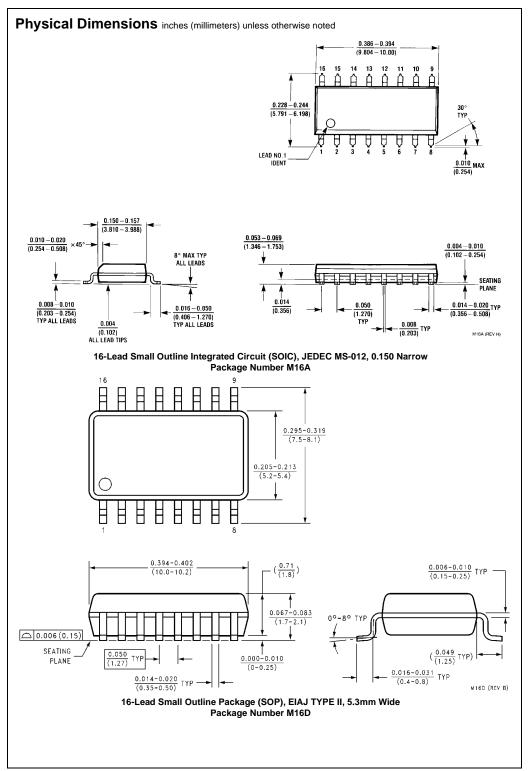
Note 2: Either voltage limit or current limit is sufficient to protect inputs.

DC Electrical Characteristics

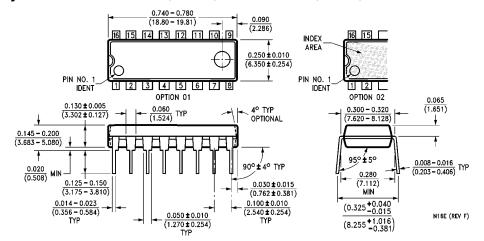
Symbol	Parameter	Min	Тур	Max	Units	v _{cc}	Conditions
V _{IH}	Input HIGH Voltage	2.0			V		Recognized as a HIGH Signal
V _{IL}	Input LOW Voltage			0.8	V		Recognized as a LOW Signal
V _{CD}	Input Clamp Diode Voltage			-1.2	V	Min	$I_{IN} = -18 \text{ mA}$
V _{OH}	Output HIGH 10% V _{CC} Voltage	2.0			V	Min	I _{OH} = -15 mA
V _{OL}	Output LOW 10% V _{CC} Voltage			0.55	V	Min	I _{OL} = 64 mA
I _{IH}	Input HIGH Current			20	μА	Max	V _{IN} = 2.7V
I _{BVI}	Input HIGH Current Breakdown Test			100	μА	Max	V _{IN} = 7.0V
I _{IL}	Input LOW Current			-20	μА	Max	V _{IN} = 0.5V
I _{OZH}	Output Leakage Current			50	μΑ	Max	V _{OUT} = 2.7V
I _{OZL}	Output Leakage Current			-50	μА	Max	V _{OUT} = 0.5V
Ios	Output Short-Circuit Current	-100		-225	mA	Max	V _{OUT} = 0V
I _{CEX}	Output HIGH Leakage Current			250	μΑ	Max	$V_{OUT} = V_{CC}$
I _{ZZ}	Bus Drainage Test			500	μΑ	0.0V	V _{OUT} = 5.25V
Гссн	Power Supply Current		20	25	mA	Max	V _O = HIGH
I _{CCL}	Power Supply Current		49	62	mA	Max	$V_O = LOW$
I _{CCZ}	Power Supply Current		35	48	mA	Max	V _O = HIGH Z

AC Electrical Characteristics

Symbol	Parameter	$T_A = +25^{\circ}C$ $V_{CC} = +5.0V$ $C_L = 50 \text{ pF}$			$T_A = 0$ °C to +70°C $C_L = 50$ pF $C_L = 50$ pF		Units
		Min	Тур	Max	Min	Max	
t _{PLH}	Propagation Delay	2.5	4.0	6.5	2.0	7.5	
t _{PHL}		1.0	1.8	5.0	1.0	5.5	ns
t _{PZH}	Enable Time (74F366)	2.5	4.2	9.5	2.5	10.0	ns
t_{PZL}		2.5	4.2	9.0	2.5	9.5	115
t _{PZH}	Enable Time (74F368)	2.5	4.2	7.5	2.0	8.5	ns
t_{PZL}		3.0	5.6	8.5	3.0	9.0	115
t _{PHZ}	Disable Time	2.0	3.3	6.5	2.0	7.0	ns
t_{PLZ}		2.0	4.1	6.5	2.0	7.0	115



Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide Package Number N16E

Fairchild does not assume any responsibility for use of any circuitry described, no circuit patent licenses are implied and Fairchild reserves the right at any time without notice to change said circuitry and specifications.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
- A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

www.fairchildsemi.com