

74F366 • 74F368

Hex Inverter/Buffer with 3-STATE Outputs

Features

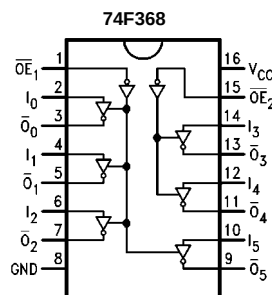
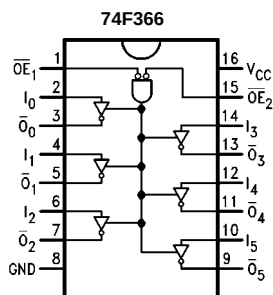
- 3-STATE buffer outputs sink 64 mA
- High-speed
- Bus-oriented
- High impedance npn base inputs for reduced loading

Ordering Code:

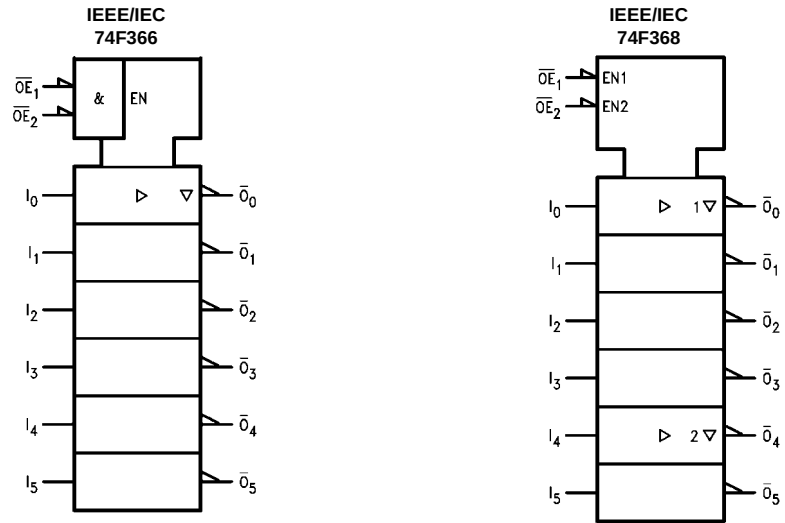
Order Number	Package Number	Package Description
74F366SC	M16A	16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
74F366PC	N16E	16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide
74F368SC	M16A	16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 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

Pin Names	Description	U.L. HIGH/LOW	Input I_{IH}/I_{IL} Output I_{OH}/I_{OL}
$\overline{OE}_1, \overline{OE}_2$	Output Enable Input (Active LOW)	1.0/0.033	20 μ A/-20 μ A
I_n	Input	1.0/0.033	20 μ A/-20 μ A
$O_n, \overline{O}_n$	Outputs	600/106.6 (80)	-12 mA/64 mA (48 mA)

Function Tables

74F366				74F368		
Inputs			Output	Inputs		Output
$\overline{OE}_1$	$\overline{OE}_2$	I	$\overline{O}$	$\overline{OE}$	I	$\overline{O}$
L	L	L	H	L	L	H
L	L	H	L	L	H	L
X	H	X	Z	H	X	Z
H	X	X	Z			

L = LOW Voltage Level
H = HIGH Voltage Level
X = Immaterial
Z = High Impedance

Absolute Maximum Ratings(Note 1)

Storage Temperature	–65°C to +150°C
Ambient Temperature under Bias	–55°C to +125°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	–0.5V to V _{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

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

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.

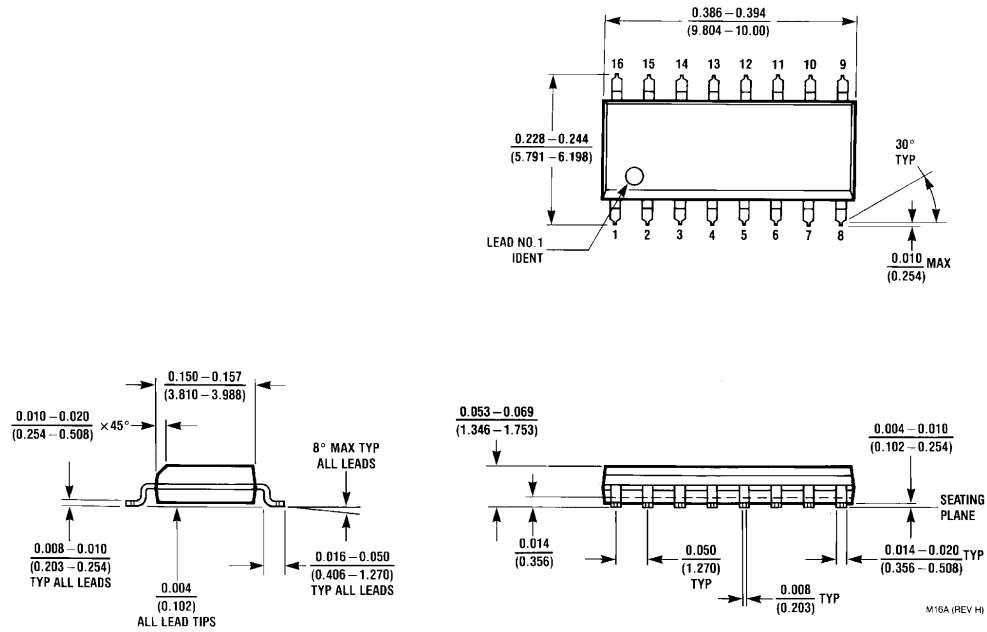
DC Electrical Characteristics

Symbol	Parameter	Min	Typ	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 mA
V _{OH}	Output HIGH Voltage 10% V _{CC}	2.0			V	Min	I _{OH} = –15 mA
V _{OL}	Output LOW Voltage 10% V _{CC}			0.55	V	Min	I _{OL} = 64 mA
I _{IH}	Input HIGH Current			20	μA	Max	V _{IN} = 2.7V
I _{BVI}	Input HIGH Current Breakdown Test			100	μA	Max	V _{IN} = 7.0V
I _{IL}	Input LOW Current			–20	μA	Max	V _{IN} = 0.5V
I _{OZH}	Output Leakage Current			50	μA	Max	V _{OUT} = 2.7V
I _{OZL}	Output Leakage Current			–50	μA	Max	V _{OUT} = 0.5V
I _{OS}	Output Short-Circuit Current	–100		–225	mA	Max	V _{OUT} = 0V
I _{CEx}	Output HIGH Leakage Current			250	μA	Max	V _{OUT} = V _{CC}
I _{ZZ}	Bus Drainage Test			500	μA	0.0V	V _{OUT} = 5.25V
I _{CCH}	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

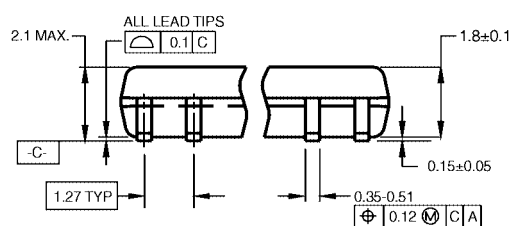
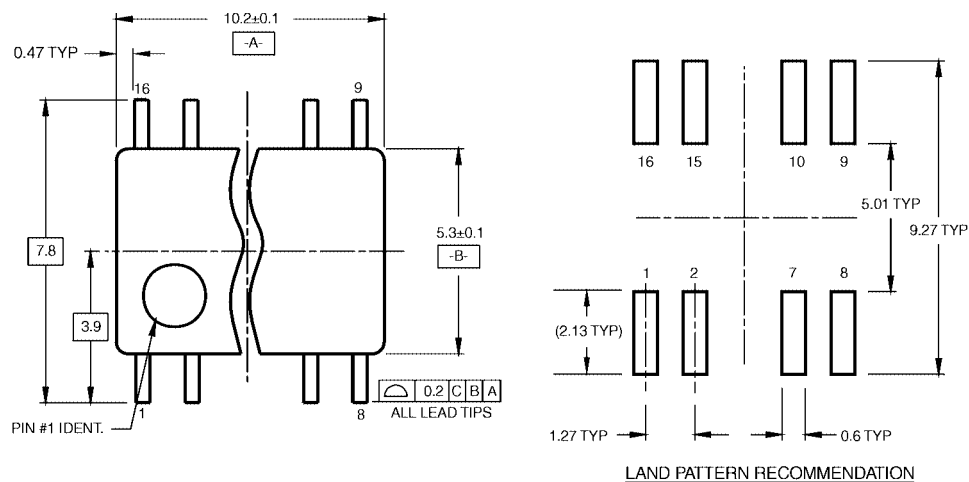
AC Electrical Characteristics

Symbol	Parameter	T _A = +25°C V _{CC} = +5.0V C _L = 50 pF			T _A = 0°C to +70°C C _L = 50 pF C _L = 50 pF		Units
		Min	Typ	Max	Min	Max	
t _{PLH}	Propagation Delay	2.5	4.0	6.5	2.0	7.5	ns
t _{PHL}		1.0	1.8	5.0	1.0	5.5	
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	
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	
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	

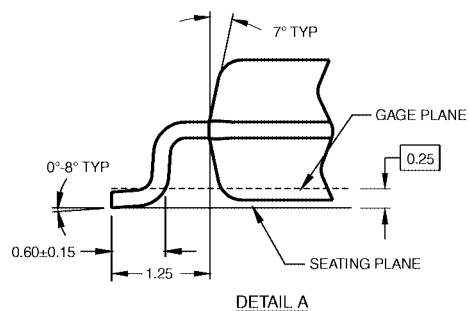
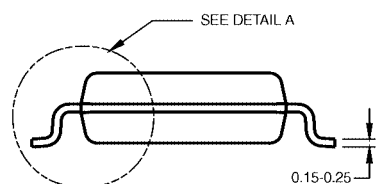
Physical Dimensions inches (millimeters) unless otherwise noted



**16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
Package Number M16A**



DIMENSIONS ARE IN MILLIMETERS



NOTES:

- A. CONFORMS TO EIAJ EDR-7320 REGISTRATION,
ESTABLISHED IN DECEMBER, 1998.
- B. DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD
FLASH, AND TIE BAR EXTRUSIONS.

M16DRevB1

**16-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
Package Number M16D**

0.740 - 0.780
(18.80 - 19.81)

0.090
(2.286)

0.250 ± 0.010
(6.350 ± 0.254)

PIN NO. 1 IDENT

16 15 14 13 12 11 10 9

1 2 3 4 5 6 7 8

OPTION 01

0.130 ± 0.005
(3.302 ± 0.127)

0.060
(1.524) TYP

4° TYP OPTIONAL

0.145 - 0.200
(3.683 - 5.080)

0.020 MIN
(0.508)

0.125 - 0.150
(3.175 - 3.810)

0.014 - 0.023
(0.356 - 0.584) TYP

0.050 ± 0.010
(1.270 ± 0.254) TYP

0.030 ± 0.015
(0.762 ± 0.381)

0.100 ± 0.010
(2.540 ± 0.254) TYP

90° ± 4° TYP

INDEX AREA

PIN NO. 1 IDENT

16 15

1 2

OPTION 02

0.300 - 0.320
(7.620 - 8.128)

0.065
(1.651)

95° ± 5°

0.280 MIN
(7.112)

0.008 - 0.016
(0.203 - 0.406) TYP

0.325 ± 0.040
(8.255 ± 1.016)

0.015
(0.381)

N16E (REV F)

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