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April 1988
Revised August 1999

74F365 Hex Buffer/Driver with 3-STATE Outputs

General Description

The 74F365 is a hex buffer and line driver designed to be employed as a memory and address driver, clock driver and bus-oriented transmitter/receiver.

Features

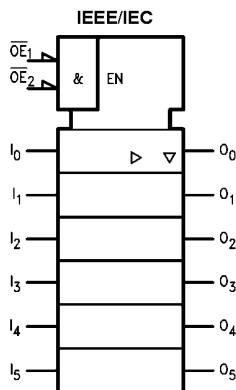
- 3-STATE buffer outputs
- Outputs sink 64 mA
- Bus-oriented

Ordering Code:

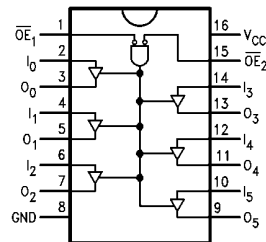
Order Number	Package Number	Package Description
74F365SC	M16A	16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
74F365PC	N16E	16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide

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

Logic Symbol



Connection Diagram



Function Table

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

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

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	Inputs	1.0/0.033	20 μ A/20 μ A
O_n	Outputs	600/106.6 (80)	-12 mA/64 mA (48 mA)

74F365

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.

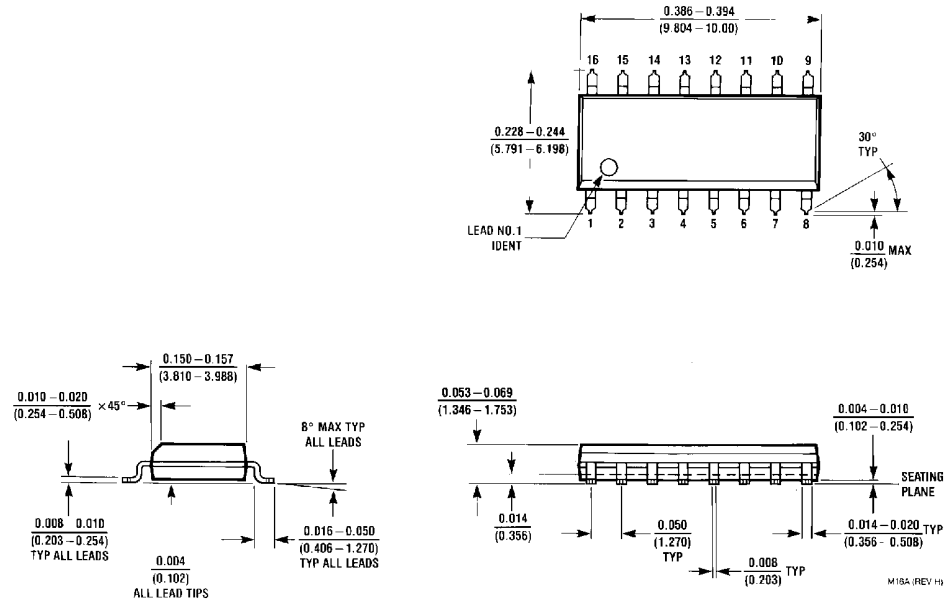
DC Electrical Characteristics

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} 2.4 10% V _{CC} 2.0 5% V _{CC} 2.7			V	Min	I _{OH} = −3 mA I _{OH} = −15 mA I _{OH} = −3 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	0.0	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		25	35	mA	Max	V _O = HIGH
I _{ccL}	Power Supply Current		44	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 = −55°C to +125°C V _{CC} = +5.0V C _L = 50 pF		T _A = 0°C to +70°C V _{CC} = +5.0V C _L = 50 pF		Units
		Min	Typ	Max	Min	Max	Min	Max	
t _{PLH}	Propagation Delay	2.5	4.6	6.5	2.0	7.0	2.0	7.0	ns
t _{PHL}	I _n to O _n	2.5	4.9	7.0	2.0	7.0	2.0	7.5	
t _{PZH}	Enable Time	2.5	5.1	9.5	2.0	8.5	2.5	10.0	ns
t _{PZL}		2.5	5.7	9.0	2.0	8.5	2.5	9.5	
t _{PHZ}	Disable Time	2.0	3.6	6.5	1.5	6.5	2.0	7.0	ns
t _{PLZ}		2.0	4.4	6.5	1.5	9.0	2.0	7.0	

Physical Dimensions inches (millimeters) unless otherwise noted



**16-Lead (0.150" Wide) Molded Small Outline Package, JEDEC (S)
Package Number M16A**

