

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

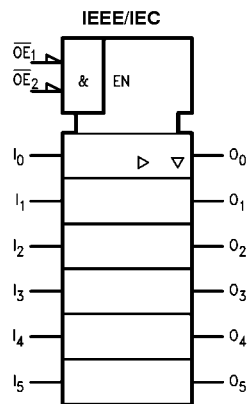
- 3-STATE buffer outputs
- Outputs sink 64 mA
- Bus-oriented

Ordering Code:

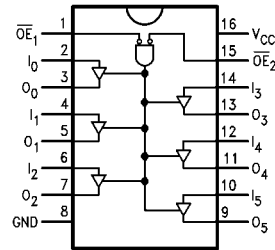
| Order Number | Package Number | Package Description |
|--------------|----------------|---|
| 74F365SC | M16A | 16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow |
| 74F365PC | N16E | 16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide |

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

Unit Loading/Fan Out

| Pin Names | Description | U.L. HIGH/LOW | Input I_H/I_L 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) |

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.

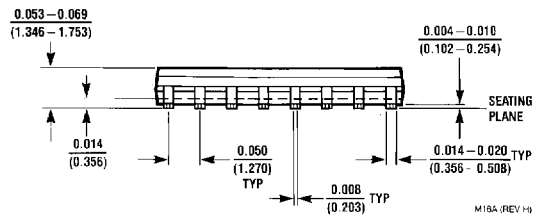
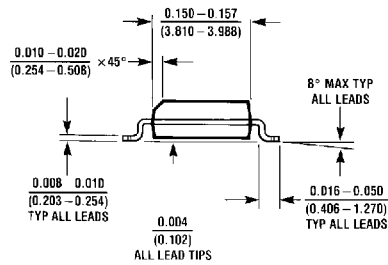
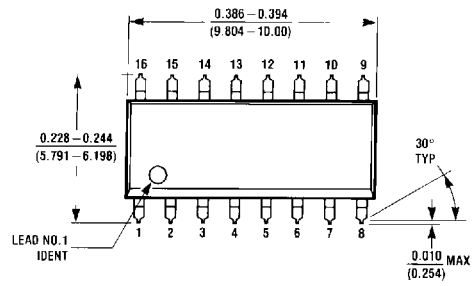
DC Electrical Characteristics

| 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 | |

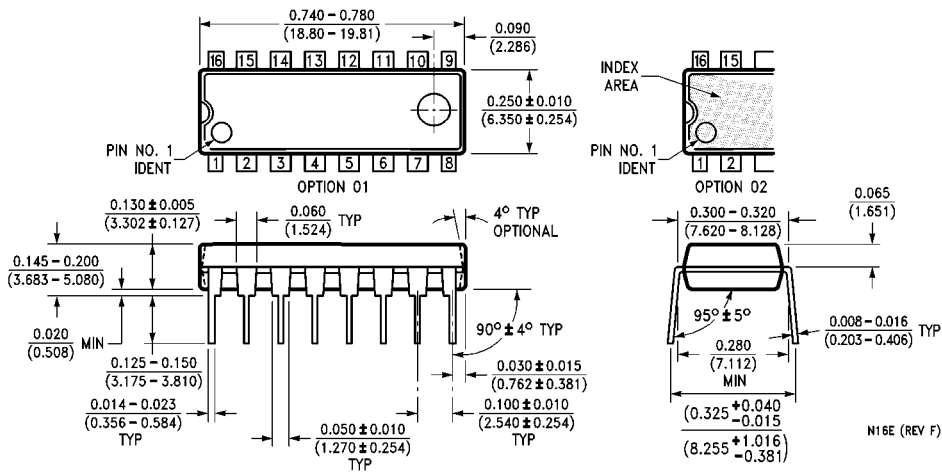
Physical Dimensions inches (millimeters) unless otherwise noted



M16A (REV H)

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

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

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