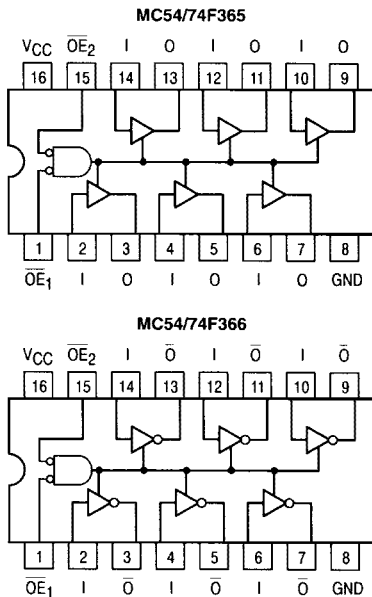




# HEX BUFFER/DRIVER GATED ENABLE NONINVERTING AND INVERTING, 3-STATE

CONNECTION DIAGRAM



FUNCTION TABLE

| Inputs            |                   |   | Outputs |                |
|-------------------|-------------------|---|---------|----------------|
| $\overline{OE}_1$ | $\overline{OE}_2$ | I | O       | $\overline{O}$ |
| L                 | L                 | L | L       | H              |
| L                 | L                 | H | H       | L              |
| X                 | H                 | X | Z       | Z              |
| H                 | X                 | X | Z       | Z              |

H = HIGH Voltage Level  
L = LOW Voltage Level  
X = Don't Care  
Z = High Impedance

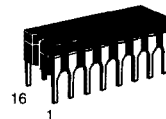
GUARANTEED OPERATING RANGES

| Symbol   | Parameter                           |       | Min | Typ | Max | Unit               |
|----------|-------------------------------------|-------|-----|-----|-----|--------------------|
| $V_{CC}$ | Supply Voltage                      | 54,74 | 4.5 | 5.0 | 5.5 | V                  |
| $T_A$    | Operating Ambient Temperature Range | 54    | -55 | 25  | 125 | $^{\circ}\text{C}$ |
|          |                                     | 74    | 0   | 25  | 70  |                    |
| $I_{OH}$ | Output Current — High               | 54    |     |     | -12 | mA                 |
|          |                                     | 74    |     |     | -15 |                    |
| $I_{OL}$ | Output Current — Low                | 54    |     |     | 48  | mA                 |
|          |                                     | 74    |     |     | 64  |                    |

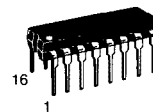
MC54/74F365  
MC54/74F366

F365  
HEX BUFFER/DRIVER  
GATED ENABLE  
NONINVERTING, 3-STATE

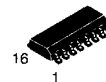
F366  
HEX BUFFER/DRIVER  
GATED ENABLE  
INVERTING, 3-STATE  
FAST™ SCHOTTKY TTL



J SUFFIX  
CERAMIC  
CASE 620-09



N SUFFIX  
PLASTIC  
CASE 648-08



D SUFFIX  
SOIC  
CASE 751B-03

ORDERING INFORMATION

MC54FXXXJ Ceramic  
MC74FXXXN Plastic  
MC74FXXXD SOIC

# MC54/74F365 • MC54/74F366

## DC CHARACTERISTICS OVER OPERATING TRMPERATURE RANGE (unless otherwise specified)

| Symbol           | Parameter                             |                  | Limits |      |      | Unit | Test Conditions               |                          |
|------------------|---------------------------------------|------------------|--------|------|------|------|-------------------------------|--------------------------|
|                  |                                       |                  | Min    | Typ  | Max  |      |                               |                          |
| V <sub>IH</sub>  | Input HIGH Voltage                    |                  | 2.0    |      |      | V    | Guaranteed Input HIGH Voltage |                          |
| V <sub>IL</sub>  | Input LOW Voltage                     |                  |        |      | 0.8  | V    | Guaranteed Input LOW Voltage  |                          |
| V <sub>IK</sub>  | Input Clamp Diode Voltage             |                  |        |      | -1.2 | V    | I <sub>IN</sub> = -18 mA      | V <sub>CC</sub> = MIN    |
| V <sub>OH</sub>  | Output HIGH Voltage                   | 54,74            | 2.4    | 3.4  |      | V    | I <sub>OH</sub> = -3.0 mA     | V <sub>CC</sub> = 4.5 V  |
|                  |                                       | 74               | 2.7    | 3.4  |      | V    | I <sub>OH</sub> = -3.0 mA     | V <sub>CC</sub> = 4.75 V |
|                  |                                       | 54               | 2.0    |      |      | V    | I <sub>OH</sub> = -12 mA      | V <sub>CC</sub> = 4.5 V  |
|                  |                                       | 74               | 2.0    |      |      | V    | I <sub>OH</sub> = -15 mA      | V <sub>CC</sub> = 4.5 V  |
| V <sub>OL</sub>  | Output LOW Voltage                    | 54               |        | 0.35 | 0.55 | V    | I <sub>OL</sub> = 48 mA       | V <sub>CC</sub> = MAX    |
|                  |                                       | 74               |        | 0.4  | 0.55 | V    | I <sub>OL</sub> = 64 mA       |                          |
| I <sub>OZH</sub> | Output OFF Current-HIGH               |                  |        |      | 50   | μA   | V <sub>OUT</sub> = 2.7 V      | V <sub>CC</sub> = MAX    |
| I <sub>OZL</sub> | Output OFF Current-LOW                |                  |        |      | -50  | μA   | V <sub>OUT</sub> = 0.5 V      | V <sub>CC</sub> = MAX    |
| I <sub>IH</sub>  | Input HIGH Current                    |                  |        |      | 20   | μA   | V <sub>IN</sub> = 2.7 V       | V <sub>CC</sub> = MAX    |
|                  |                                       |                  |        |      | 100  | μA   | V <sub>IN</sub> = 7.0 V       | V <sub>CC</sub> = 0 V    |
| I <sub>IL</sub>  | Input LOW Current                     |                  |        |      | -20  | μA   | V <sub>IN</sub> = 0.5 V       | V <sub>CC</sub> = MAX    |
| I <sub>OS</sub>  | Output Short Circuit Current (Note 2) |                  | -100   |      | -225 | mA   | V <sub>OUT</sub> = GND        | V <sub>CC</sub> = MAX    |
| I <sub>CC</sub>  | F365                                  | I <sub>CCH</sub> |        |      | 35   | mA   | V <sub>CC</sub> = MAX         |                          |
|                  |                                       | I <sub>CCL</sub> |        |      | 62   |      |                               |                          |
|                  |                                       | I <sub>CCZ</sub> |        |      | 48   |      |                               |                          |
|                  | F366                                  | I <sub>CCH</sub> |        |      | 25   |      |                               |                          |
|                  |                                       | I <sub>CCL</sub> |        |      | 62   |      |                               |                          |
|                  |                                       | I <sub>CCZ</sub> |        |      | 48   |      |                               |                          |

### NOTES:

- For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
- Not more than one output should be shorted at a time, nor for more than 1 second.

## AC CHARACTERISTICS

| Symbol           | Parameter                          | 54/74F                                                                          |     |     | 54F                                                                                                              |      | 74F                                                                                                           |     | Unit |
|------------------|------------------------------------|---------------------------------------------------------------------------------|-----|-----|------------------------------------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------|-----|------|
|                  |                                    | $T_A = +25^{\circ}\text{C}$<br>$V_{CC} = +5.0\text{ V}$<br>$C_L = 50\text{ pF}$ |     |     | $T_A = -55^{\circ}\text{C to } +125^{\circ}\text{C}$<br>$V_{CC} = 5.0\text{ V} \pm 10\%$<br>$C_L = 50\text{ pF}$ |      | $T_A = 0^{\circ}\text{C to } +70^{\circ}\text{C}$<br>$V_{CC} = 5.0\text{ V} \pm 10\%$<br>$C_L = 50\text{ pF}$ |     |      |
|                  |                                    | Min                                                                             | Typ | Max | Min                                                                                                              | Max  | Min                                                                                                           | Max |      |
| t <sub>PLH</sub> | Propagation Delay<br>F365          | 2.0                                                                             | 4.5 | 6.5 | 2.0                                                                                                              | 8.0  | 2.0                                                                                                           | 7.0 | ns   |
| t <sub>PHL</sub> | I <sub>N</sub> to O <sub>N</sub>   | 3.0                                                                             | 5.5 | 7.0 | 3.0                                                                                                              | 8.5  | 3.0                                                                                                           | 7.5 |      |
| t <sub>PLH</sub> | Propagation Delay<br>F366          | 2.0                                                                             | 5.0 | 6.5 | 2.0                                                                                                              | 8.5  | 2.0                                                                                                           | 7.5 | ns   |
| t <sub>PHL</sub> | I <sub>N</sub> to $\overline{O}_N$ | 1.0                                                                             | 3.0 | 5.0 | 1.0                                                                                                              | 6.5  | 1.0                                                                                                           | 5.5 |      |
| t <sub>pZH</sub> | Output Enable Time                 | 3.0                                                                             | 6.5 | 9.5 | 3.0                                                                                                              | 11   | 3.0                                                                                                           | 10  | ns   |
| t <sub>pZL</sub> | to HIGH and LOW Level              | 4.0                                                                             | 6.0 | 9.0 | 4.0                                                                                                              | 10.5 | 4.0                                                                                                           | 9.5 |      |
| t <sub>PHZ</sub> | Output Disable Time                | 2.5                                                                             | 4.5 | 6.5 | 2.5                                                                                                              | 8.0  | 2.5                                                                                                           | 7.0 | ns   |
| t <sub>PLZ</sub> | from HIGH and LOW Level            | 1.5                                                                             | 4.0 | 6.0 | 1.5                                                                                                              | 7.5  | 1.5                                                                                                           | 6.5 |      |