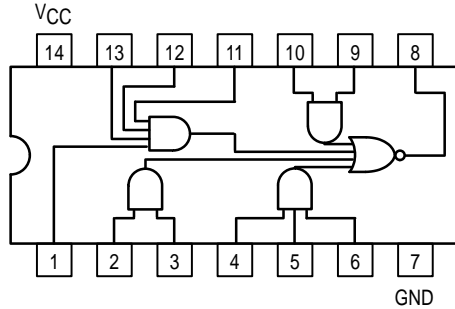


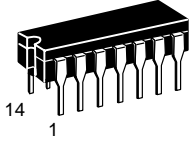


4-2-3-2-INPUT AND-OR-INVERT GATE

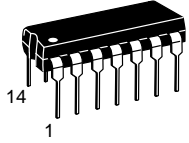


MC54/74F64

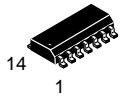
**4-2-3-2-INPUT
AND-OR-INVERT GATE
FAST™ SCHOTTKY TTL**



J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06



D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

| | |
|----------|---------|
| MC54FXXJ | Ceramic |
| MC74FXXN | Plastic |
| MC74FXXD | SOIC |

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 | °C |
| | | 74 | 0 | 25 | 70 | |
| I _{OH} | Output Current — High | 54, 74 | | | -1.0 | mA |
| I _{OL} | Output Current — Low | 54, 74 | | | 20 | mA |

MC54/74F64

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

| Symbol | Parameter | Limits | | | Unit | Test Conditions |
|-----------------|--|--------|-----|------|------|---|
| | | Min | Typ | Max | | |
| V _{IH} | Input HIGH Voltage | 2.0 | | | V | Guaranteed Input HIGH Voltage |
| V _{IL} | Input LOW Voltage | | | 0.8 | V | Guaranteed Input LOW Voltage |
| V _{IK} | Input Clamp Diode Voltage | | | -1.2 | V | V _{CC} = MIN, I _{IN} = -18 mA |
| V _{OH} | Output HIGH Voltage | 54, 74 | 2.5 | | V | I _{OH} = -1.0 mA, V _{CC} = 4.50 V |
| | | 74 | 2.7 | | V | I _{OH} = -1.0 mA, V _{CC} = 4.75 V |
| V _{OL} | Output LOW Voltage | | | 0.5 | V | I _{OL} = 20 mA, V _{CC} = MIN |
| I _{IH} | Input HIGH Current | | | 20 | μA | V _{CC} = MAX, V _{IN} = 2.7 V |
| | | | | 0.1 | mA | V _{CC} = MAX, V _{IN} = 7.0 V |
| I _{IL} | Input LOW Current | | | -0.6 | mA | V _{CC} = MAX, V _{IN} = 0.5 V |
| I _{OS} | Output Short Circuit Current (Note 2) | -60 | | -150 | mA | V _{CC} = MAX, V _{OUT} = 0 V |
| I _{CC} | Power Supply Current Total, Output HIGH | | | 2.8 | mA | V _{CC} = MAX, V _{IN} = GND |
| | Total, Output LOW | | | 4.7 | mA | V _{CC} = MAX, V _{IN} = Note 3 |

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.
- I_{CC}L is measured with all inputs of one gate open and remaining inputs grounded.

AC CHARACTERISTICS

| Symbol | Parameter | 54/74F | | 54F | | 74F | | Unit |
|------------------|-------------------|--|-----|---|-----|---|-----|------|
| | | T _A = +25°C V _{CC} = +5.0 V C _L = 50 pF | | T _A = -55°C to +125°C V _{CC} = 5.0 V ± 10% C _L = 50 pF | | T _A = 0°C to 70°C V _{CC} = 5.0 V ± 10% C _L = 50 pF | | |
| | | Min | Max | Min | Max | Min | Max | |
| t _{PLH} | Propagation Delay | 2.5 | 6.5 | 2.5 | 8.5 | 2.5 | 7.5 | ns |
| t _{PHL} | Propagation Delay | 1.5 | 4.5 | 1.5 | 6.5 | 1.5 | 5.5 | ns |