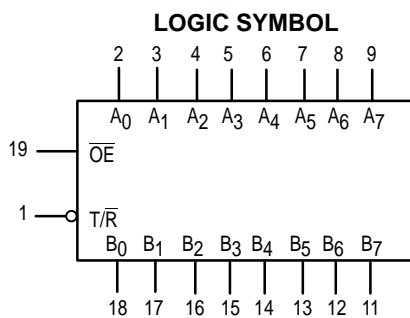
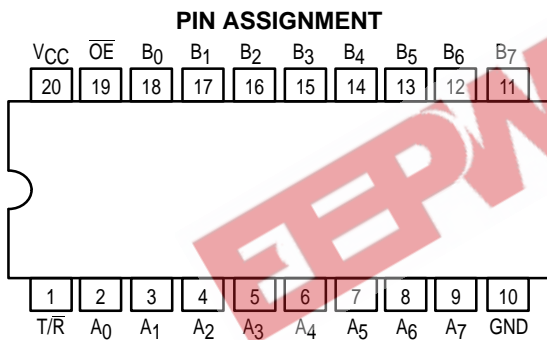




OCTAL BIDIRECTIONAL TRANSCEIVER WITH 3-STATE INPUTS/OUTPUTS

The MC74F1245 contains eight noninverting bidirectional buffers with 3-state outputs and is intended for bus-oriented applications. Current sinking capability is 24 mA at the A ports and 64 mA at the B ports. The Transmit/Receive (T/R) input determines the direction of data flow through the bidirectional transceiver. Transmit (active HIGH) enables data from A ports to B ports; Receive (active LOW) enables data from B ports to A ports. The Output Enable input, when HIGH, disables both A and B ports by placing them in a high-Z condition.

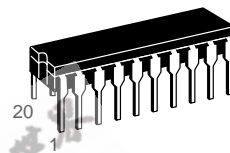
- Noninverting Buffers
- Bidirectional Data Path
- B Outputs Sink 64 mA
- High Impedance Inputs for Reduced Loading
- Same Function and Pinout as the F245
- ESD Protection > 4000 Volts



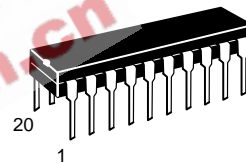
MC74F1245

OCTAL BIDIRECTIONAL TRANSCEIVER WITH 3-STATE INPUTS/OUTPUTS

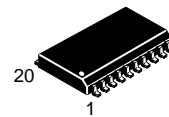
FAST™ SCHOTTKY TTL



**J SUFFIX
CERAMIC
CASE 732-03**



**N SUFFIX
PLASTIC
CASE 738-03**



**DW SUFFIX
SOIC
CASE 751D-03**

ORDERING INFORMATION

MC74FXXXXJ Ceramic
MC74FXXXXN Plastic
MC74FXXXXDW SOIC

GUARANTEED OPERATING RANGES

| Symbol | Parameter | | Min | Typ | Max | Unit |
|-----------------|-------------------------------------|------------------------|-----|-----|-----|---------|
| V _{CC} | DC Supply Voltage | 74 | 4.5 | 5.0 | 5.5 | V |
| T _A | Operating Ambient Temperature Range | 74 | 0 | 25 | 70 | °C |
| I _{OH} | Output Current — High | A _n Outputs | 74 | — | — | –3.0 mA |
| I _{OL} | Output Current — Low | A _n Outputs | 74 | — | — | 24 mA |
| I _{OH} | Output Current — High | B _n Outputs | 74 | — | — | –15 mA |
| I _{OL} | Output Current — Low | B _n Outputs | 74 | — | — | 64 mA |

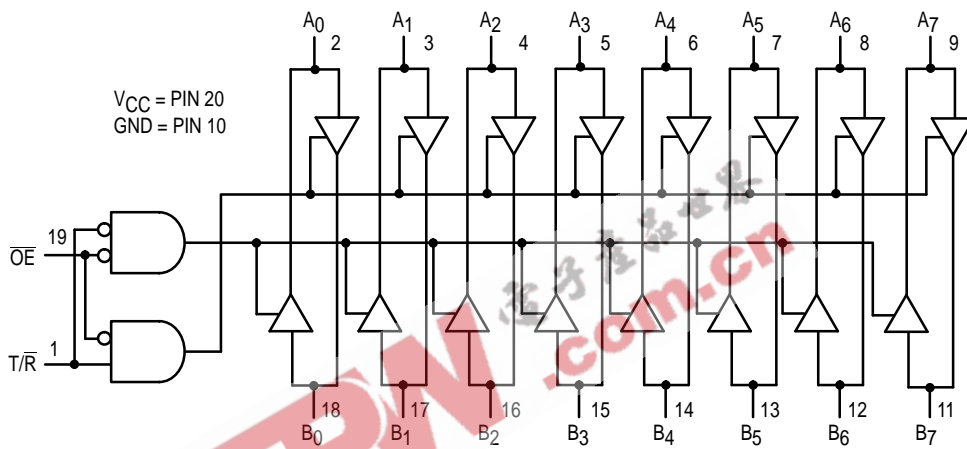
MC74F1245

FUNCTION TABLE

| Inputs | | Inputs/Outputs | |
|-----------------|------------------|----------------|---------|
| \overline{OE} | T/\overline{R} | A_n | B_n |
| L | L | $A = B$ | Inputs |
| L | H | Inputs | $B = A$ |
| H | X | Z | Z |

H = HIGH voltage level; L = LOW voltage level; X = Don't care; Z = HIGH impedance "off" state.

LOGIC DIAGRAM



MC74F1245

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

| Symbol | Parameter | Limits | | | Unit | Test Conditions (Note 1) | | |
|------------------|--|--|-------|------|------|---|--|--------------------------|
| | | 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 | — | -0.73 | -1.2 | V | V _{CC} = MIN, I _{IN} = -18 mA | | |
| V _{OH} | Output HIGH Voltage A _n Outputs | 74 | 2.4 | 3.3 | — | V | I _{OH} = -3.0 mA | V _{CC} = 4.5 V |
| | | 74 | 2.7 | 3.3 | — | | | V _{CC} = 4.75 V |
| V _{OH} | Output HIGH Voltage B _n Outputs | 74 | 2.4 | 3.4 | — | V | I _{OH} = -3.0 mA | V _{CC} = 4.5 V |
| | | 74 | 2.7 | 3.4 | — | | | V _{CC} = 4.75 V |
| | | 74 | 2.0 | — | — | V | I _{OH} = -15 mA | V _{CC} = 4.5 V |
| V _{OL} | Output LOW Voltage A _n Outputs | 74 | — | 0.35 | 0.5 | V | I _{OL} = 24 mA | V _{CC} = MIN |
| V _{OL} | Output LOW Voltage B _n Outputs | 74 | — | — | 0.55 | V | I _{OL} = 64 mA | |
| I _{OZH} | Output Off Current HIGH | — | — | 70 | μA | V _{CC} = MAX | V _{OUT} = 2.7 V | |
| I _{OZL} | Output Off Current LOW | — | — | -70 | μA | V _{CC} = MAX, V _{OUT} = 0.5 V | | |
| I _{IH} | Input HIGH Current | OE, T/R Inputs | — | — | 40 | μA | V _{CC} = MAX, V _{IN} = 2.7 V | |
| | | A _n , B _n Inputs | — | — | 70 | μA | V _{CC} = MAX, V _{IN} = 2.7 V | |
| | | OE, T/R Inputs | — | — | 100 | μA | V _{CC} = 0 V, V _{IN} = 7.0 V | |
| | | B _n Inputs | — | — | 1.0 | mA | V _{CC} = 0 V, V _{IN} = 5.5 V | |
| I _{IHH} | Input HIGH Current | A _n Inputs | — | — | 2.0 | mA | V _{CC} = 0 V, V _{IN} = 5.5 V | |
| I _{IL} | Input LOW Current | OE, T/R Inputs | — | — | -40 | μA | V _{CC} = MAX, V _{IN} = 0.5 V | |
| | | A _n , B _n Inputs | — | — | -70 | μA | | |
| I _{OS} | Output Short Circuit Current (Note 2) | A _n Outputs | -60 | — | -150 | mA | V _{CC} = MAX, V _{OUT} = GND | |
| | | B _n Outputs | -100 | — | -225 | mA | | |
| I _{CC} | Power Supply Current | I _{CC} H | — | — | 120 | mA | V _{CC} = MAX | |
| | | I _{CC} L | — | — | 120 | | | |
| | | I _{CC} Z | — | — | 130 | | | |

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 ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | 74F | | 74F | | Unit |
|------------------|---|--|------|--|------|------|
| | | T _A = +25°C V _{CC} = +5.0 V 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 | |
| t _{PLH} | Propagation Delay | 2.0 | 6.5 | 1.5 | 7.0 | ns |
| t _{PHL} | Transparent Mode A _n to B _n or B _n to A _n | 2.5 | 7.5 | 2.0 | 8.0 | ns |
| t _{PZH} | Output Enable Time | 3.0 | 8.0 | 2.5 | 9.0 | ns |
| | | 4.0 | 10.0 | 3.5 | 11.0 | |
| t _{PHZ} | Output Disable Time | 2.0 | 8.0 | 1.5 | 9.0 | ns |
| | | 1.0 | 10.0 | 1.0 | 11.0 | |