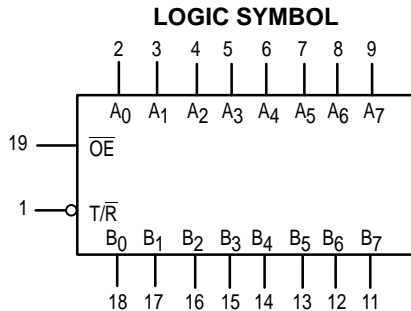
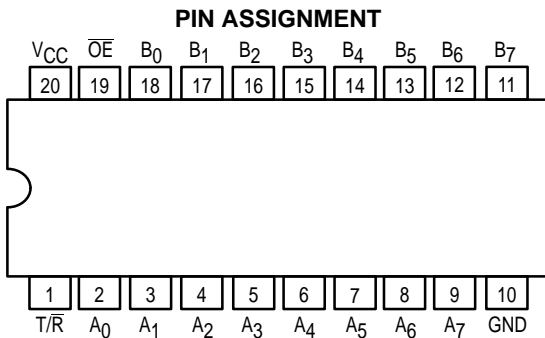




# OCTAL BIDIRECTIONAL TRANSCEIVER WITH 3-STATE INPUTS/OUTPUTS

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.

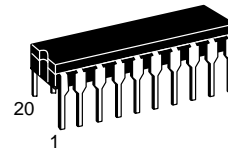
- Noninverting Buffers
- Bidirectional Data Path
- B Outputs Sink 64 mA
- High Impedance Inputs for Reduced Loading
- Same Function and Pinout as the F245
- ESD Protection > 4000 Volts



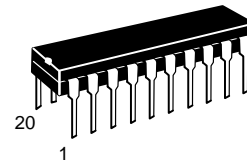
## MC74F1245

### OCTAL BIDIRECTIONAL TRANSCEIVER WITH 3-STATE INPUTS/OUTPUTS

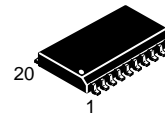
FAST™ SCHOTTKY TTL



**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 <sub>CC</sub>	DC Supply Voltage	74	4.5	5.0	5.5	V	
T <sub>A</sub>	Operating Ambient Temperature Range	74	0	25	70	°C	
I <sub>OH</sub>	Output Current — High	A <sub>n</sub> Outputs	74	—	—	—3.0	mA
I <sub>OL</sub>	Output Current — Low	A <sub>n</sub> Outputs	74	—	—	24	mA
I <sub>OH</sub>	Output Current — High	B <sub>n</sub> Outputs	74	—	—	-15	mA
I <sub>OL</sub>	Output Current — Low	B <sub>n</sub> Outputs	74	—	—	64	mA



# MC74F1245

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

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

### NOTES:

1. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
2. 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 <sub>A</sub> = +25°C V <sub>CC</sub> = +5.0 V C <sub>L</sub> = 50 pF		T <sub>A</sub> = 0°C to +70°C V <sub>CC</sub> = +5.0 V ±10% C <sub>L</sub> = 50 pF		
		Min	Max	Min	Max	
t <sub>PLH</sub>	Propagation Delay	2.0	6.5	1.5	7.0	ns
t <sub>PHL</sub>	Transparent Mode A <sub>n</sub> to B <sub>n</sub> or B <sub>n</sub> to A <sub>n</sub>	2.5	7.5	2.0	8.0	
t <sub>PZH</sub>	Output Enable Time	3.0	8.0	2.5	9.0	ns
		t <sub>PZL</sub>	4.0	10.0	3.5	
t <sub>PHZ</sub>	Output Disable Time	2.0	8.0	1.5	9.0	ns
		t <sub>PLZ</sub>	1.0	10.0	1.0	