54F/74F545

Octal Bidirectional Transceiver With 3-State Inputs/Outputs

Description

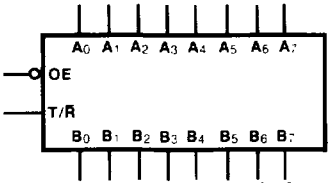
The 'F545 is an 8-bit, 3-state, high-speed transceiver. It provides bidirectional drive for bus-oriented microprocessor and digital communications systems. Straight through bidirectional transceivers are featured, with 20 mA bus drive capability on the A ports and 64 mA bus drive capability on the B ports.

One input, Transmit/Receive ($T/\overline{R}$) determines the direction of logic signals through the bidirectional transceiver. Transmit enables data from A ports to B ports; Receive enables data from B ports to A ports. The Output Enable input disables both A and B ports by placing them in a 3-state condition.

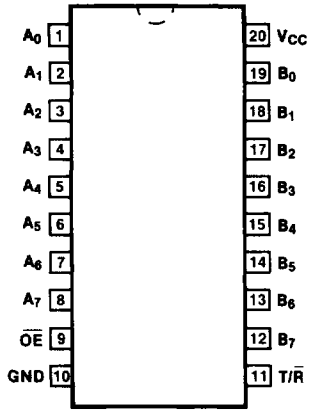
- **Higher Drive than 8304**
- **8-Bit Bidirectional Data Flow Reduces System Package Count**
- **3-State Inputs/Outputs for Interfacing with Bus-Oriented Systems**
- **20 mA and 64 mA Bus Drive Capability on A and B Ports, Respectively**
- **Transmit/Receive and Output Enable Simplify Control Logic**

Ordering Code: See Section 5

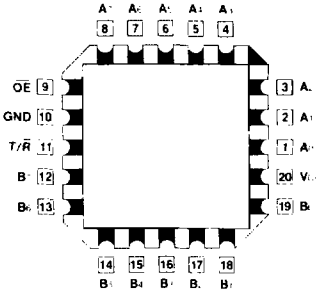
Logic Symbol



Connection Diagrams



Pin Assignment for DIP and SOIC



Pin Assignment for LCC and PCC

Input Loading/Fan-Out: See Section 3 for U.L. definitions

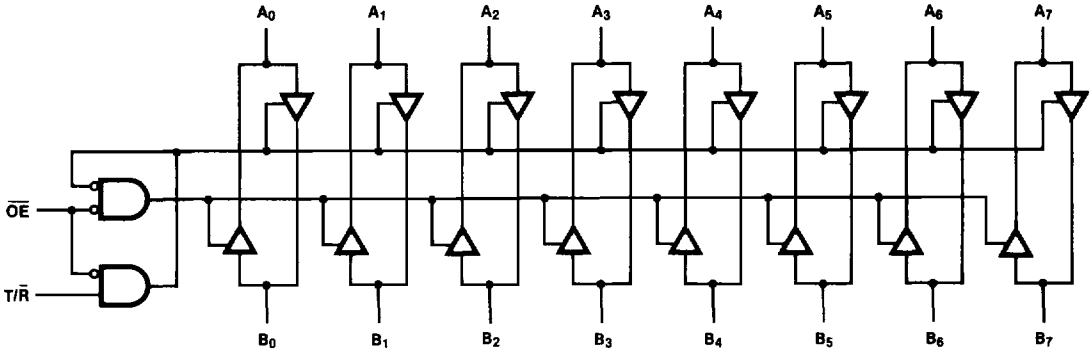
Pin Names	Description	54F/74F(U.L.) HIGH/LOW
$\overline{OE}$	Output Enable Input (Active LOW)	0.5/0.75
$T/\overline{R}$	Transmit/Receive Input	0.5/0.75
A_0-A_7	Side A 3-State Inputs or	1.75/0.406
	3-State Outputs	75/15(12.5)
B_0-B_7	Side B 3-State Inputs or	1.75/0.406
	3-State Outputs	75/40 (30)

Truth Table

Inputs		Outputs
$\overline{OE}$	T/$\overline{R}$	
L	L	Bus B Data to Bus A
L	H	Bus A Data to Bus B
H	X	High Z

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

Logic Diagram



Please note that this diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

DC Characteristics over Operating Temperature Range (unless otherwise specified)

Symbol	Parameter	54F/74F			Units	Conditions
		Min	Typ	Max		
I_{CCH}	Power Supply Current		70	90	mA	V_{CC} = Max
I_{CCL}			95	120		
I_{CCZ}			85	110		

AC Characteristics: See Section 3 for waveforms and load configurations

Symbol	Parameter	54F/74F			54F		74F		Units	Fig. No.
		$T_A = +25°C$ $V_{CC} = +5.0\ V$ $C_L = 50\ pF$			T_A, V_{CC} = Mil $C_L = 50\ pF$		T_A, V_{CC} = Com $C_L = 50\ pF$			
		Min	Typ	Max	Min	Max	Min	Max		
t_{PLH} t_{PHL}	Propagation Delay A_n to B_n or B_n to A_n	2.5 2.5	4.2 4.6	6.0 6.0	2.0 2.0	7.5 7.5	2.5 2.5	7.0 7.0	ns	3-1 3-4
t_{PZH} t_{PZL}	Output Enable Time	3.0 3.5	5.3 6.0	7.0 8.0	2.5 3.0	9.0 10.0	3.0 3.5	8.0 9.0	ns	3-1 3-12 3-13
t_{PHZ} t_{PLZ}	Output Disable Time	3.0 2.0	5.0 5.0	6.5 6.5	2.5 2.0	9.0 10.0	3.0 2.0	7.5 7.5		