

# 54LS/74LS245

## OCTAL BUS TRANSCEIVER

(With 3-State Outputs)

**DESCRIPTION** — The 'LS245 is an octal bus transmitter/receiver designed for 8-line asynchronous 2-way data communication between data busses. Direction input (DR) controls transmission of data from bus A to bus B or bus B to bus A depending upon its logic level. The Enable input ( $\bar{E}$ ) can be used to isolate the busses.

- HYSTERESIS INPUTS TO IMPROVE NOISE IMMUNITY
- 2-WAY ASYNCHRONOUS DATA BUS COMMUNICATION
- INPUT DIODES LIMIT HIGH SPEED TERMINATION EFFECTS
- FULLY TTL AND CMOS COMPATIBLE

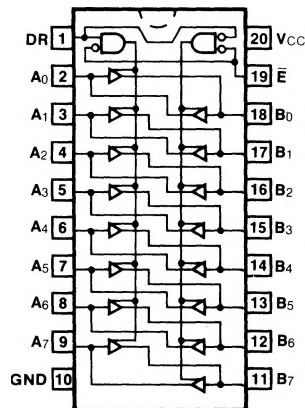
**ORDERING CODE:** See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		$V_{CC} = +5.0\text{ V} \pm 5\%$ , $T_A = 0^\circ\text{C to } +70^\circ\text{C}$	$V_{CC} = +5.0\text{ V} \pm 10\%$ , $T_A = -55^\circ\text{C to } +125^\circ\text{C}$	
Plastic DIP (P)	A	74LS245PC		9Z
Ceramic DIP (D)	A	74LS245DC	54LS245DM	4E
Flatpak (F)	A	74LS245FC	54LS245FM	4F

**INPUT LOADING/FAN-OUT:** See Section 3 for U.L. definitions

PINS	54/74LS (U.L.) HIGH/LOW
Inputs	0.5/0.125
Outputs	75/15 (7.5)

### CONNECTION DIAGRAM PINOUT A



### TRUTH TABLE

INPUTS		OUTPUT
$\bar{E}$	DR	
L	L	Bus B Data to Bus A
L	H	Bus A Data to Bus B
H	X	Isolation

H = HIGH Voltage Level  
L = LOW Voltage Level  
X = Immaterial

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

SYMBOL	PARAMETER		54/74LS		UNITS	CONDITIONS	
			Min	Max			
VOH	Output HIGH Voltage	XM	2.0		V	IOH = -12 mA	VCC = Min VIN = VIH or VIL per Truth Table
		XC	2.0				
VOH	Output HIGH Voltage		2.4		V	IOH = -3.0 mA, VCC = Min VIN = VIH or VIL per Truth Table	
VT+ — VT-	Hysteresis Voltage		0.2		V	VCC = Min	
Ios	Output Short Circuit Current		-40	-225	mA	VCC = Max, VOUT = 0 V	
Icc	Power Supply Current	HIGH		70	mA	VCC = Max	
		LOW		90			
		OFF		95			

**AC CHARACTERISTICS:** VCC = +5.0 V, TA = +25°C (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER		54/74LS		UNITS	CONDITIONS	
			CL = 45 pF				
			Min	Max			
tPLH tPHL	Propagation Delay Data to Output			18	ns	Figs. 3-1, 3-5	
			18				
tPZH tPZL	Output Enable Time			25	ns	Figs. 3-3, 3-11, 3-12 RL = 667 Ω	
			30				
tPLZ tPHZ	Output Disable Time			25	ns	Figs. 3-3, 3-11, 3-12 RL = 667 Ω, CL = 5 pF	
			18				