

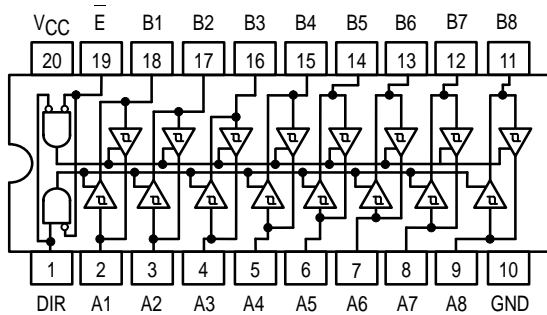


OCTAL BUS TRANSCEIVER

The SN54/74LS245 is an Octal Bus Transmitter/Receiver designed for 8-line asynchronous 2-way data communication between data buses. 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 (E) can be used to isolate the buses.

- Hysteresis Inputs to Improve Noise Immunity
- 2-Way Asynchronous Data Bus Communication
- Input Diodes Limit High-Speed Termination Effects
- ESD > 3500 Volts

LOGIC AND CONNECTION DIAGRAMS DIP (TOP VIEW)



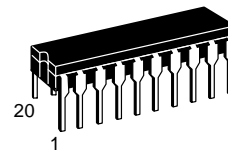
TRUTH TABLE

INPUTS		OUTPUT
E	DIR	
L	L	Bus B Data to Bus A
L	H	Bus A Data to Bus B
H	X	Isolation

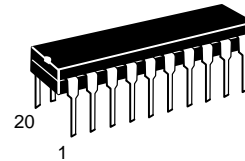
H = HIGH Voltage Level
L = LOW Voltage Level
X = Immaterial

SN54/74LS245

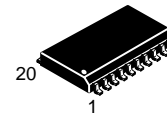
OCTAL BUS TRANSCEIVER LOW POWER SCHOTTKY



J SUFFIX
CERAMIC
CASE 732-03



N SUFFIX
PLASTIC
CASE 738-03



DW SUFFIX
SOIC
CASE 751D-03

ORDERING INFORMATION

SN54LSXXXJ Ceramic
SN74LSXXXN Plastic
SN74LSXXXDW SOIC

GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V _{CC}	Supply Voltage	54	4.5	5.0	5.5	V
		74	4.75	5.0	5.25	
T _A	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
I _{OH}	Output Current — High	54, 74			-3.0	mA
		54 74			-12 -15	
I _{OL}	Output Current — Low	54			12	mA
		74			24	

SN54/74LS245

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 for All Inputs	
V _{IL}	Input LOW Voltage	54			0.7	V	Guaranteed Input LOW Voltage for All Inputs	
		74			0.8			
V _{T+} -V _{T-}	Hysteresis		0.2	0.4		V	V _{CC} = MIN	
V _{IK}	Input Clamp Diode Voltage			-0.65	-1.5	V	V _{CC} = MIN, I _{IN} = -18 mA	
V _{OH}	Output HIGH Voltage	54, 74	2.4	3.4		V	V _{CC} = MIN, I _{OH} = -3.0 mA	
		54, 74	2.0			V	V _{CC} = MIN, I _{OH} = MAX	
V _{OL}	Output LOW Voltage	54, 74		0.25	0.4	V	I _{OL} = 12 mA	V _{CC} = V _{CC} MIN, V _{IN} = V _{IL} or V _{IH} per Truth Table
		74		0.35	0.5	V	I _{OL} = 24 mA	
I _{OZH}	Output Off Current HIGH				20	μA	V _{CC} = MAX, V _{OUT} = 2.7 V	
I _{OZL}	Output Off Current LOW				-200	μA	V _{CC} = MAX, V _{OUT} = 0.4 V	
I _{IH}	Input HIGH Current	A or B, DR or E			20	μA	V _{CC} = MAX, V _{IN} = 2.7 V	
		DR or E			0.1	mA	V _{CC} = MAX, V _{IN} = 7.0 V	
		A or B			0.1	mA	V _{CC} = MAX, V _{IN} = 5.5 V	
I _{IL}	Input LOW Current				-0.2	mA	V _{CC} = MAX, V _{IN} = 0.4 V	
I _{OS}	Output Short Circuit Current (Note 1)		-40		-225	mA	V _{CC} = MAX	
I _{CC}	Power Supply Current Total, Output HIGH				70	mA	V _{CC} = MAX	
	Total, Output LOW				90			
	Total at HIGH Z				95			

Note 1: Not more than one output should be shorted at a time, nor for more than 1 second.

AC CHARACTERISTICS (T_A = 25°C, V_{CC} = 5.0 V, T_{RISE}/T_{FALL} ≤ 6.0 ns)

Symbol	Parameter		Limits			Unit	Test Conditions	
			Min	Typ	Max			
t _{PLH} t _{PHL}	Propagation Delay, Data to Output			8.0 8.0	12 12	ns	C _L = 45 pF, R _L = 667 Ω	
t _{PZH}	Output Enable Time to HIGH Level			25	40			
t _{PZL}	Output Enable Time to LOW Level			27	40			
t _{PLZ}	Output Disable Time from LOW Level			15	25	ns	C _L = 5.0 pF, R _L = 667 Ω	
t _{PHZ}	Output Disable Time from HIGH Level			15	25			