

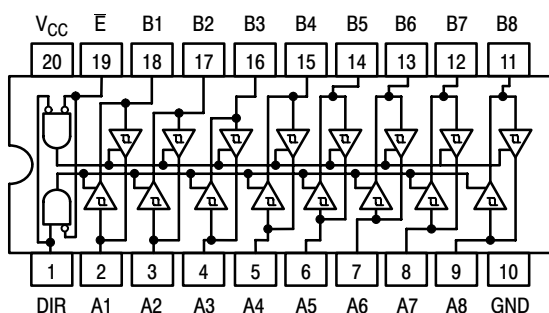
SN74LS245

Octal Bus Transceiver

The SN74LS245 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 (\bar{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
\bar{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

GUARANTEED OPERATING RANGES

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Supply Voltage	4.75	5.0	5.25	V
T_A	Operating Ambient Temperature Range	0	25	70	°C
I_{OH}	Output Current – High			-3.0	mA
				-15	mA
I_{OL}	Output Current – Low			24	mA

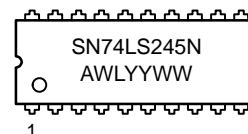
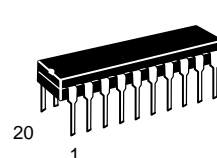


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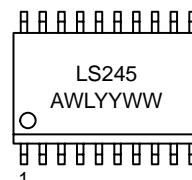
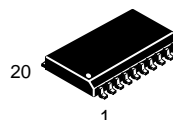
<http://onsemi.com>

**LOW
POWER
SCHOTTKY**

MARKING DIAGRAMS



PDIP-20
N SUFFIX
CASE 738



SOIC-20
DW SUFFIX
CASE 751D

A = Assembly Location
WL = Wafer Lot
YY = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
SN74LS245N	PDIP-20	1440 Units/Box
SN74LS245DW	SOIC-20	2500/Tape & Reel

SN74LS245

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			0.8	V	Guaranteed Input LOW Voltage for All Inputs
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	2.4	3.4		V	V _{CC} = MIN, I _{OH} = -3.0 mA
		2.0			V	V _{CC} = MIN, I _{OH} = MAX
V _{OL}	Output LOW Voltage		0.25	0.4	V	I _{OL} = 12 mA
			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 \bar{E}		20	μA	V _{CC} = MAX, V _{IN} = 2.7 V
		DR or \bar{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		

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

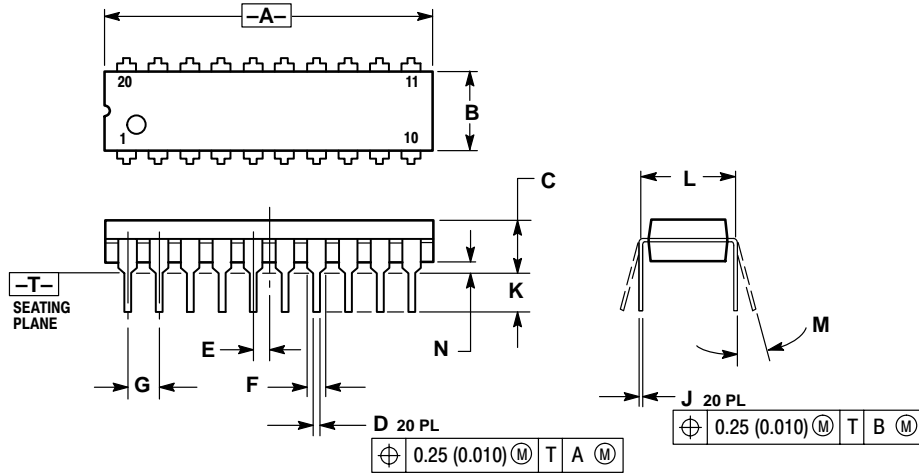
AC CHARACTERISTICS (T_A = 25°C, V_{CC} = 5.0 V, T_{RISE}/T_{FALL} ≤ 6.0 ns)

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	ns	
t _{PZL}	Output Enable Time to LOW Level		27	40	ns	
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	ns	

SN74LS245

PACKAGE DIMENSIONS

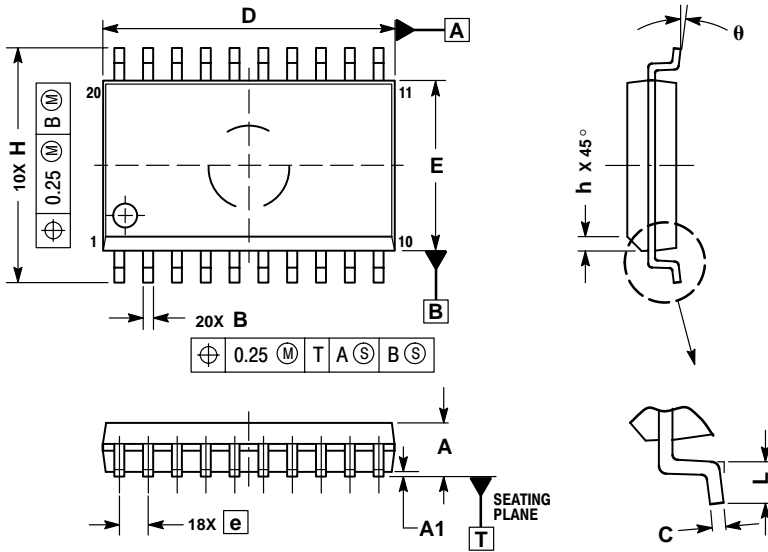
N SUFFIX PLASTIC PACKAGE CASE 738-03 ISSUE E



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
 4. DIMENSION B DOES NOT INCLUDE MOLD FLASH.

		INCHES		MILLIMETERS	
DIM		MIN	MAX	MIN	MAX
A		1.010	1.070	25.66	27.17
B		0.240	0.260	6.10	6.60
C		0.150	0.180	3.81	4.57
D		0.015	0.022	0.39	0.55
E		0.050 BSC		1.27 BSC	
F		0.050	0.070	1.27	1.77
G		0.100 BSC		2.54 BSC	
J	20 PL	0.008	0.015	0.21	0.38
K		0.110	0.140	2.80	3.55
L		0.300 BSC		7.62 BSC	
M		0°	15°	0°	15°
N		0.020	0.040	0.51	1.01

D SUFFIX PLASTIC SOIC PACKAGE CASE 751D-05 ISSUE F



- NOTES:
1. DIMENSIONS ARE IN MILLIMETERS.
 2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
 3. DIMENSIONS D AND E DO NOT INCLUDE MOLD PROTRUSION.
 4. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
 5. DIMENSION B DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.13 TOTAL IN EXCESS OF B DIMENSION AT MAXIMUM MATERIAL CONDITION.

		MILLIMETERS	
DIM		MIN	MAX
A		2.35	2.65
A1		0.10	0.25
B		0.35	0.49
C		0.23	0.32
D		12.65	12.95
E		7.40	7.60
e		1.27 BSC	
H		10.05	10.55
h		0.25	0.75
L		0.50	0.90
θ		0°	7°

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