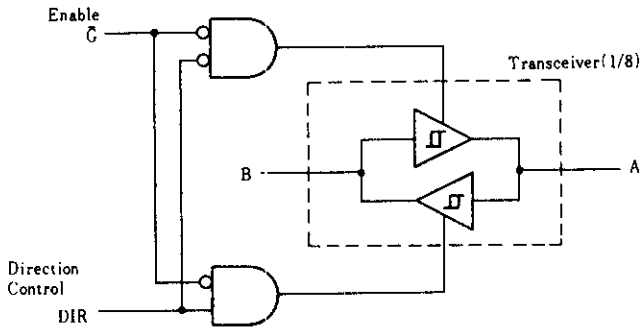


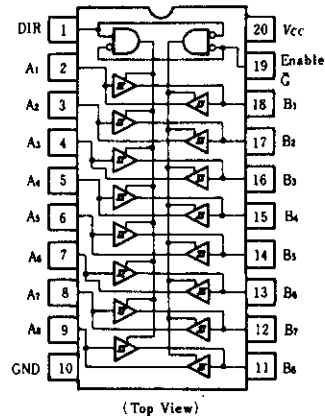
HD74LS245 ● Octal Bus Transceivers (with three-state outputs)

This octal bus transceiver is designed for synchronous two-way communication between data buses. The control function implementation minimizes external timing requirements. The device allows data transmission from the A bus to the B bus or from the B bus to the A bus depending upon the logic level at the direction control (DIR) input. The enable input (\bar{C}) can be used to disable the device so that the buses are effectively isolated.

■ BLOCK DIAGRAM



■ PIN ARRANGEMENT



■ FUNCTION TABLE

ENABLE \bar{C}	DIRECTION CONTROL DIR	OPERATION
L	L	B data to A bus
L	H	A data to B bus
H	X	Isolation

H; high level,
L; low level,
X; irrelevant

■ ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Ratings	Unit
Supply voltage	V_{CC}	7.0	V
Input voltage	DIR, \bar{C} A, B	7.0	V
		5.5	
Operating temperature range	T_{opr}	-20 ~ +75	°C
Storage temperature range	T_{stg}	-65 ~ +150	°C

■ RECOMMENDED OPERATING CONDITIONS

Item	Symbol	min	typ	max	Unit
Output current	I_{OH}	-	-	-15	mA
	I_{OL}	-	-	24	mA

HD74LS245

■ ELECTRICAL CHARACTERISTICS ($T_a = -20 \sim +75^\circ\text{C}$)

Item	Symbol	Test Conditions	min	typ*	max	Unit		
Input voltage	V_{IH}		2.0	—	—	V		
	V_{IL}		—	—	0.8			
Hysteresis	$V_T^+ - V_T^-$	$V_{CC} = 4.75\text{V}$	0.2	0.4	—	V		
Output voltage	V_{OH}	$V_{CC} = 4.75\text{V}, V_{IH} = 2\text{V}, V_{IL} = 0.8\text{V}$	$I_{OH} = -3\text{mA}$	2.4	—	—	V	
			$I_{OH} = -15\text{mA}$	2	—	—		
	V_{OL}	$V_{CC} = 4.75\text{V}, V_{IH} = 2\text{V}, V_{IL} = 0.8\text{V}$	$I_{OL} = 12\text{mA}$	—	—	0.4	V	
			$I_{OL} = 24\text{mA}$	—	—	0.5		
Output current	I_{OZH}	$V_{CC} = 5.25\text{V}$			10	μA		
	I_{OZL}	$\bar{G} = 2\text{V}$			-200			
Input current	I_{IH}	$V_{CC} = 5.25\text{V}, V_I = 2.7\text{V}$	—	—	20	μA		
	I_{IL}	$V_{CC} = 5.25\text{V}, V_I = 0.4\text{V}$	—	—	-0.2	mA		
	A or B DIR or \bar{G}	I_I	$V_{CC} = 5.25\text{V}$	$V_I = 5.5\text{V}$	—	—	0.1	mA
				$V_I = 7\text{V}$	—	—	0.1	
Short-circuit output current	I_{OS}	$V_{CC} = 5.25\text{V}$	-40	—	-225	mA		
Supply current**	I_{CCH}		—	48	70	mA		
	I_{CCL}	$V_{CC} = 5.25\text{V}$	—	62	90			
	I_{CCZ}		—	64	95			
Input clamp voltage	V_{IK}	$V_{CC} = 4.75\text{V}, I_{IN} = -18\text{mA}$	—	—	-1.5	V		

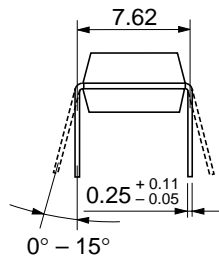
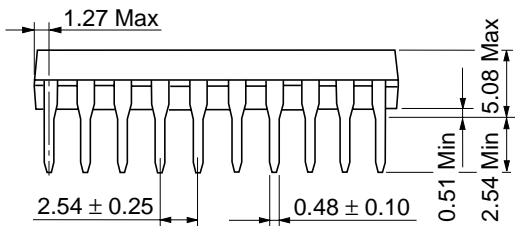
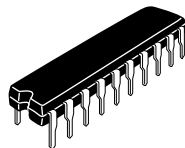
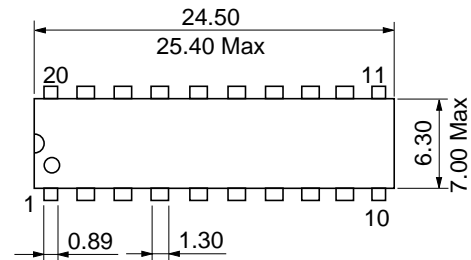
* $V_{CC} = 5\text{V}, T_a = 25^\circ\text{C}$

** I_{CC} is measured with all outputs open.

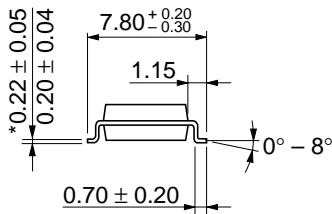
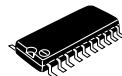
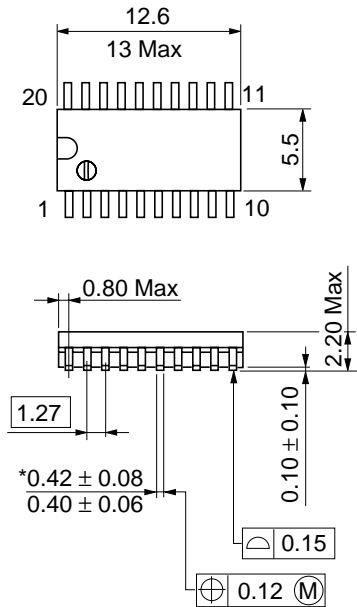
■ SWITCHING CHARACTERISTICS ($V_{CC} = 5\text{V}, T_a = 25^\circ\text{C}$)

Item	Symbol	Test Conditions	min	typ	max	Unit	
Propagation delay time	t_{PLH}	$C_L = 45\text{pF}$ $R_L = 667\ \Omega$	—	8	15	ns	
	t_{PHL}		—	8	15		
Output enable time	t_{ZL}			—	27		40
	t_{ZH}			—	25		40
Output disable time	t_{LZ}	$C_L = 5\text{pF}$	—	15	25		
	t_{HZ}	$R_L = 667\ \Omega$	—	15	25		

Note) Refer to Test Circuit and Waveform of the Common Item

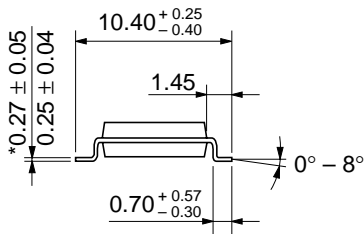
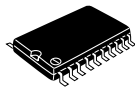
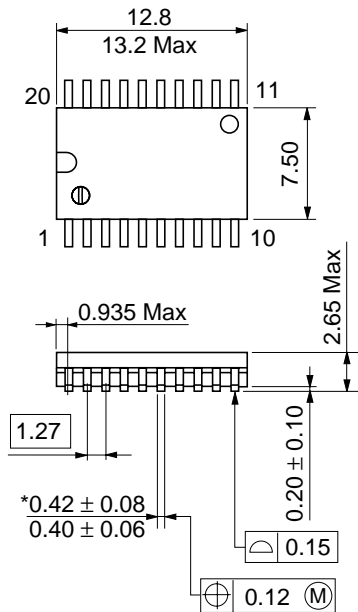


Hitachi Code	DP-20N
JEDEC	—
EIAJ	Conforms
Weight (reference value)	1.26 g



Hitachi Code	FP-20DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.31 g

*Dimension including the plating thickness
Base material dimension



Hitachi Code	FP-20DB
JEDEC	Conforms
EIAJ	—
Weight (reference value)	0.52 g

*Dimension including the plating thickness
 Base material dimension

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HITACHI

Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1> (408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
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