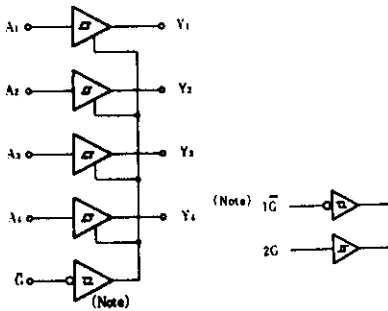


# HD74LS241

Octal Buffers/Line Drivers/Line Receivers  
(non inverted three-state outputs)

## BLOCK DIAGRAM (1/2)

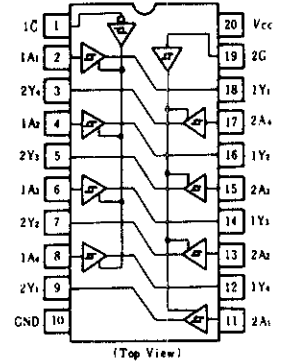


## FUNCTION TABLE

Inputs			Output
$1\bar{G}$	$2\bar{G}$	A	Y
H	L	X	Z
L	H	H	H
L	H	L	L

Note) H; high level,  
L; low level,  
X; irrelevant  
Z; off (high-impedance) state  
of a 3-state output

## PIN ARRANGEMENT



## 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	V
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
	$V_{OL}$	$V_{CC} = 4.75\text{V}, V_{IH} = 2\text{V}, V_{IL} = 0.8\text{V}, I_{OL} = 12\text{mA}$ $I_{OL} = 24\text{mA}$	2.0	—	—	V
Output current	$I_{OZH}$	$V_{CC} = 5.25\text{V}, V_{IH} = 2\text{V}, V_O = 2.7\text{V}$	—	—	20	$\mu\text{A}$
	$I_{OZL}$	$V_{IL} = 0.8\text{V}, V_O = 0.4\text{V}$	—	—	-20	$\mu\text{A}$
Input current	$I_{IH}$	$V_{CC} = 5.25\text{V}, V_I = 2.7\text{V}$	—	—	20	$\mu\text{A}$
	$I_{IL}$	$V_{CC} = 5.25\text{V}, V_I = 0.4\text{V}$	—	—	-0.2	$\text{mA}$
	$I_I$	$V_{CC} = 5.25\text{V}, V_I = 7\text{V}$	—	—	0.1	$\text{mA}$
Short-circuit output current	$I_{OS}$	$V_{CC} = 5.25\text{V}$	-40	—	-225	$\text{mA}$
Supply current**	Outputs high	$V_{CC} = 5.25\text{V}$	—	13	23	$\text{mA}$
	Outputs low		—	27	46	
	All outputs disabled		—	32	54	
Input clamp voltage	$V_{IK}$	$V_{CC} = 4.75\text{V}, I_{IN} = -18\text{mA}$	—	—	-1.5	V

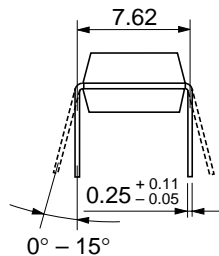
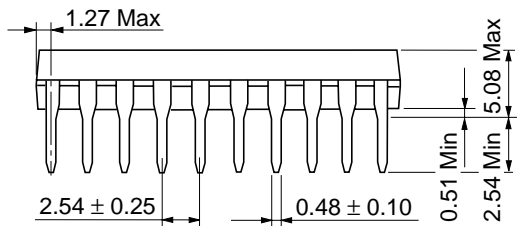
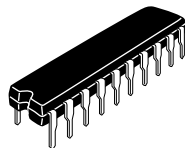
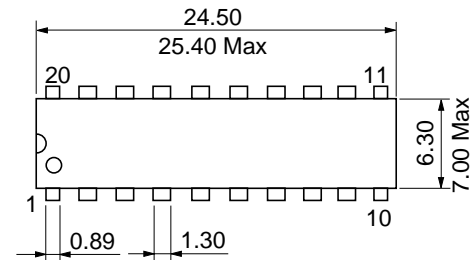
\*  $V_{CC} = 5\text{V}, T_a = 25^\circ\text{C}$

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

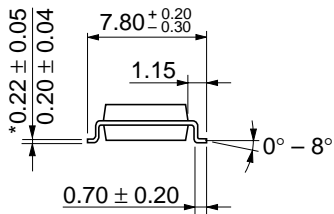
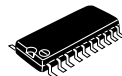
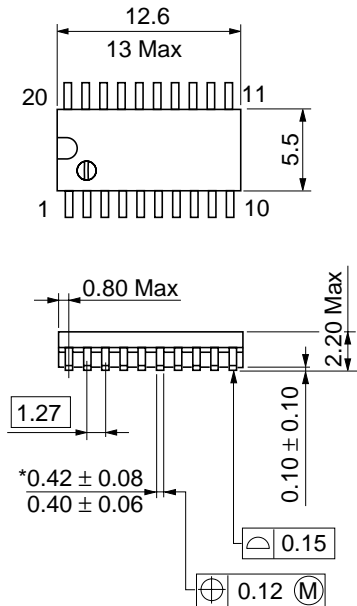
## SWITCHING CHARACTERISTICS ( $V_{CC} = 5\text{V}, T_a = 25^\circ\text{C}$ )

Item	Symbol	Test Conditions	min	typ	max	Unit
Propagation delay time	$t_{PLH}$	$C_L = 45\text{pF}, R_L = 667\ \Omega$	—	12	18	ns
	$t_{PHL}$		—	12	18	
Output enable time	$t_{ZL}$		—	20	30	ns
	$t_{ZH}$		—	15	23	
Output disable time	$t_{LZ}$	$C_L = 5\text{pF}, R_L = 667\ \Omega$	—	15	25	ns
	$t_{HZ}$		—	10	18	

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

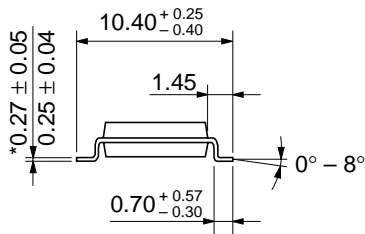
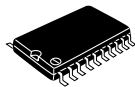
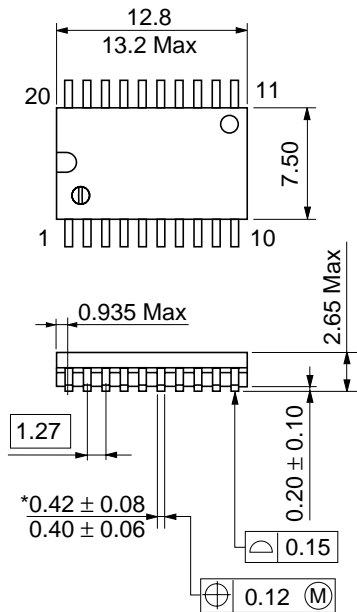


Hitachi Code	DP-20N
JEDEC	—
EIAJ	Conforms
Weight (reference value)	1.26 g



\*Dimension including the plating thickness  
Base material dimension

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



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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