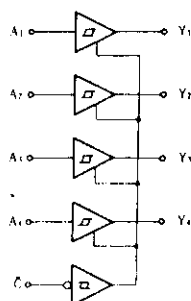


HD74LS244 • Octal Buffers/Line Drivers/Line Receivers (non inverted three-state outputs)

■ BLOCK DIAGRAM (1/2)

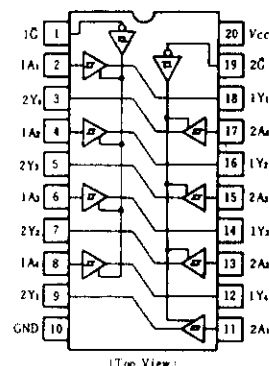


■ FUNCTION TABLE

Input		Output
$\bar{G}$	A	Y
H	X	Z
L	H	H
L	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
			$V_{IL} = 0.5\text{V}, I_{OH} = -15\text{mA}$	2.0	---	---	
	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}	$V_{CC} = 5.25\text{V}, V_{IH} = 2\text{V}, V_{IL} = 0.8\text{V}$	$V_O = 2.7\text{V}$	---	---	20	μA
	I_{OZL}		$V_O = 0.4\text{V}$	---	---	-20	
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
	I_i	$V_{CC} = 5.25\text{V}, V_i = 7\text{V}$		---	---	0.1	mA
Short-circuit output current		I_{OS}	$V_{CC} = 5.25\text{V}$	-40	---	-225	mA
Supply current	Output "H"	I_{CC}	$V_{CC} = 5.25\text{V}$	---	13	23	mA
	Output "L"			---	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

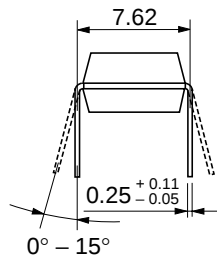
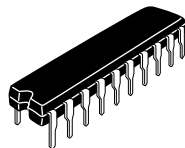
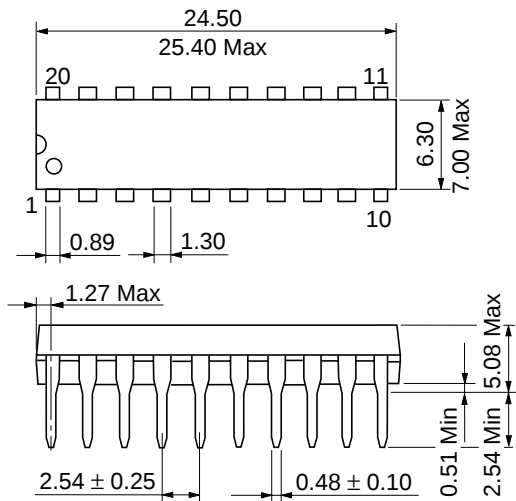
* $V_{CC} = 5\text{V}, T_a = 25^\circ\text{C}$

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

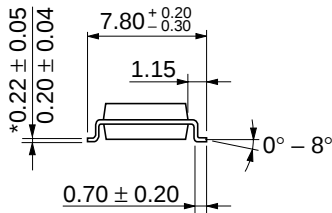
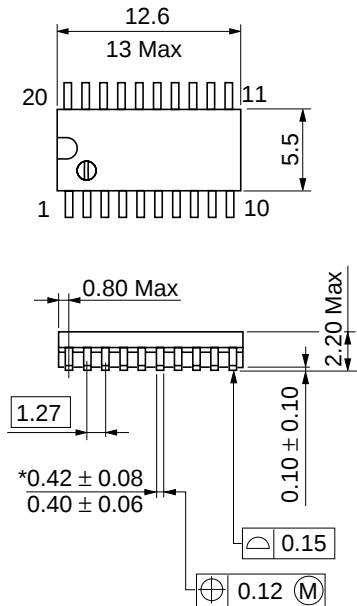
■ SWITCHING CHARACTERISTICS ($V_{CC} = 5\text{V}, T_a = 25^\circ\text{C}$)

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	ns
Output disable time	t_{LZ}	$C_L = 5\text{pF}, R_L = 667\Omega$	---	15	25	ns
	t_{HZ}		---	10	18	ns

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



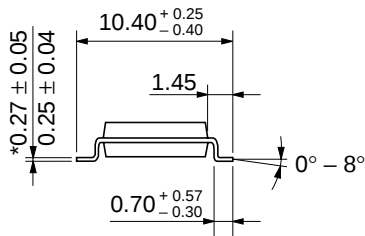
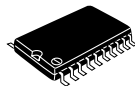
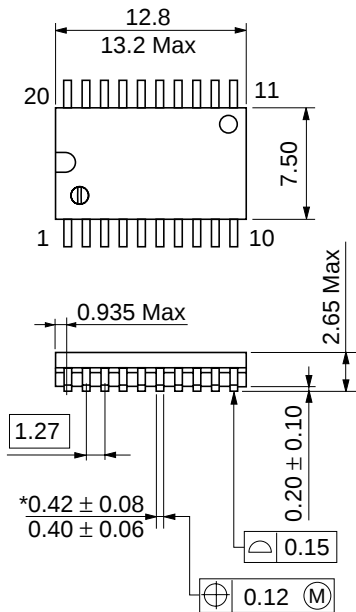
Hitachi Code	DP-20N
JEDEC	—
EIAJ	Conforms
Weight (reference value)	1.26 g



*Dimension including the plating thickness
Base material dimension

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

Unit: mm



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

$$\frac{\text{*Dimension including the plating thickness}}{\text{Base material dimension}}$$

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