To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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   Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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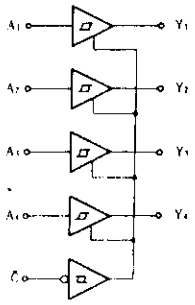
HD74LS244 ●Octal Buffers/Line Drivers/Line Receivers (non inverted three-state outputs)

■BLOCK DIAGRAM(½)

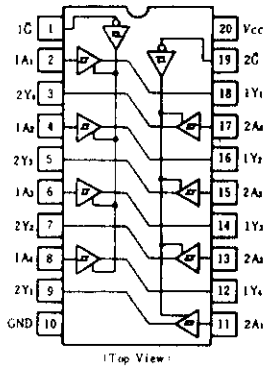


■FUNCTION TABLE

Input		Output
$\overline{G}$	A	Y
H	×	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 ($Ta = -20 \sim +75°C$)

Item		Symbol	Test Conditions		min	typ*	max	Unit
Input voltage		V_{IH}			2.0	—	—	V
		V_{IL}			—	—	0.8	V
Hysteresis		$V_T^+ - V_T^-$	$V_{CC}=4.75V$		0.2	0.4	—	V
Output voltage		V_{OH}	$V_{CC}=4.75V$, $V_{IH}=2V$	$V_{IL}=0.8V$, $I_{OH}=-3mA$	2.4	—	—	V
				$V_{IL}=0.5V$, $I_{OH}=-15mA$	2.0	—	—	
		V_{OL}	$V_{CC}=4.75V$, $V_{IH}=2V$, $V_{IL}=0.8V$	$I_{OL}=12mA$	—	—	0.4	V
				$I_{OL}=24mA$	—	—	0.5	
Output current		I_{OZH}	$V_{CC}=5.25V$, $V_{IH}=2V$, $V_{IL}=0.8V$	$V_O=2.7V$	—	—	20	μA
		I_{OZL}		$V_O=0.4V$	—	—	−20	
Input current		I_{IH}	$V_{CC}=5.25V$, $V_I=2.7V$		—	—	20	μA
		I_{IL}	$V_{CC}=5.25V$, $V_I=0.4V$		—	—	−0.2	mA
		I_I	$V_{CC}=5.25V$, $V_I=7V$		—	—	0.1	mA
Short-circuit output current		I_{OS}	$V_{CC}=5.25V$		−40	—	−225	mA
Supply current	Output "H"	I_{CC}	$V_{CC}=5.25V$		—	13	23	mA
	Output "L"				—	27	46	
	All outputs disabled**				—	32	54	
Input clamp voltage		V_{IK}	$V_{CC}=4.75V$, $I_{IN}=-18mA$		—	—	−1.5	V

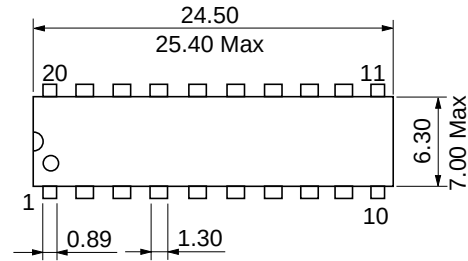
* $V_{CC}=5V$, $Ta=25°C$
** I_{CC} is measured with all outputs open.

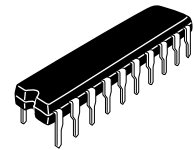
■SWITCHING CHARACTERISTICS ($V_{CC}=5V$, $Ta=25°C$)

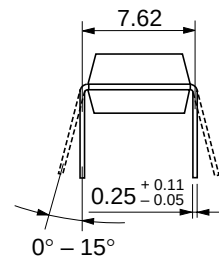
Item	Symbol	Test Conditions	min	typ	max	Unit
Propagation delay time	t_{PLH}	$C_L=45pF$, $R_L=667\Omega$	—	12	18	ns
	t_{PHL}		—	12	18	
Output enable time	t_{ZL}		—	20	30	ns
	t_{ZH}		—	15	23	ns
Output disable time	t_{LZ}	$C_L=5pF$, $R_L=667\Omega$	—	15	25	ns
	t_{HZ}		—	10	18	ns

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

Unit: mm

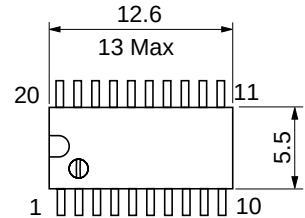


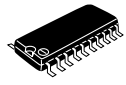


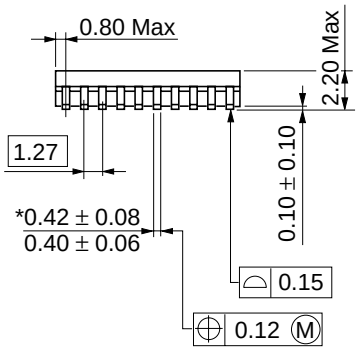


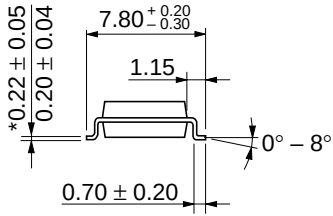
Hitachi Code	DP-20N
JEDEC	—
EIAJ	Conforms
Weight (reference value)	1.26 g

Unit: mm





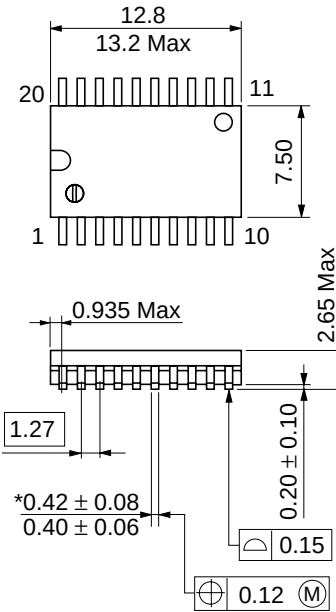


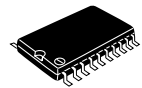


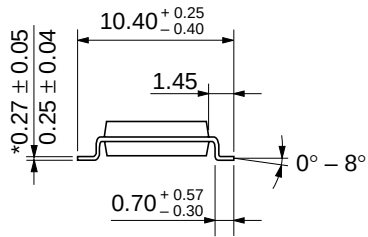
*Dimension including the plating thickness
Base material dimension

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

Unit: mm







*Dimension including the plating thickness
Base material dimension

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

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