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April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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HD74LS366A

Hex Bus Drivers (with three-state outputs)

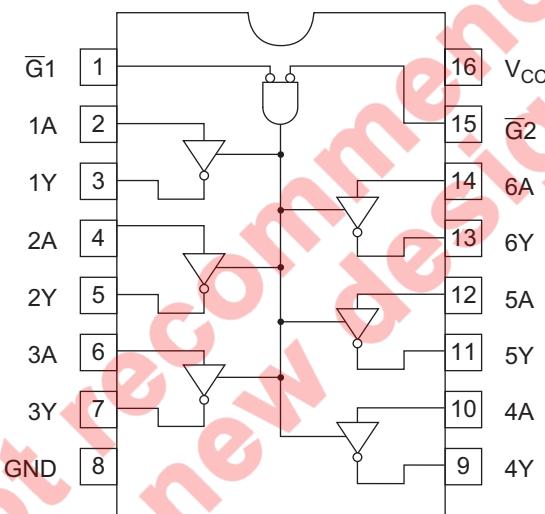
REJ03D0479-0300
Rev.3.00
Jul.22.2005

Features

- Ordering Information

Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS366AFPEL	SOP-16 pin (JEITA)	PRSP0016DH-B (FP-16DAV)	FP	EL (2,000 pcs/reel)

Pin Arrangement



(Top view)

Function Table

Inputs			Output
\bar{G}_1	\bar{G}_2	A	Y
H	X	X	Z
X	H	X	Z
L	L	H	L
L	L	L	H

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

Absolute Maximum Ratings

Item	Symbol	Ratings	Unit
Supply voltage	V_{CC}	7	V
Input voltage	V_{IN}	7	V
Output voltage (off-state)	V_O (off)	5.5	V
Power dissipation	P_T	400	mW
Operating temperature	T_{OPR}	-20 to +75	°C
Storage temperature	T_{STG}	-65 to +150	°C

Note: Voltage value, unless otherwise noted, are with respect to network ground terminal.

Recommended Operating Conditions

Item	Symbol	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.75	5.00	5.25	V
Output current	I_{OH}	—	—	-2.6	mA
	I_{OL}	—	—	24	mA
Operating temperature	T_{OPR}	-20	25	75	°C

Electrical Characteristics

($T_a = -20$ to $+75$ °C)

Item	Symbol	min.	typ.*	max.	Unit	Condition
Input voltage	V_{IH}	2.0	—	—	V	$V_{CC} = 4.75$ V, $V_{IH} = 2$ V, $V_{IL} = 0.8$ V, $I_{OH} = -2.6$ mA
	V_{IL}	—	—	0.8		
Output voltage	V_{OH}	2.4	—	—	V	$I_{OL} = 24$ mA, $V_{CC} = 4.75$ V, $V_{IH} = 2$ V, $V_{IL} = 0.8$ V
	V_{OL}	—	—	0.5		
		—	—	0.4		
Output current	I_{OZH}	—	—	20	μ A	$V_O = 2.4$ V, $V_{CC} = 5.25$ V, $V_O = 0.4$ V, $V_{CC} = 5.25$ V, $V_{IH} = 2$ V, $V_{IL} = 0.8$ V
	I_{OZL}	—	—	-20		
Input current	I_{IH}	—	—	20	μ A	$V_{CC} = 5.25$ V, $V_I = 2.7$ V
	I_{IL}	—	—	-20	μ A	$V_{CC} = 5.25$ V, $V_I = 0.5$ V, Either \bar{G} inputs = 2 V
		—	—	-0.4	mA	$V_{CC} = 5.25$ V, $V_I = 0.4$ V, Both \bar{G} inputs = 0.4 V
	I_I	—	—	-0.4	mA	$V_{CC} = 5.25$ V, $V_I = 0.4$ V
	I_I	—	—	0.1	mA	$V_{CC} = 5.25$ V, $V_I = 7$ V
Short-circuit output current	I_{OS}	-40	—	-225	mA	$V_{CC} = 5.25$ V
Supply current	I_{CC}^{**}	—	12	21	mA	$V_{CC} = 5.25$ V
Input clamp voltage	V_{IK}	—	—	-1.5	V	$V_{CC} = 4.75$ V, $I_{IN} = -18$ mA

Notes: * $V_{CC} = 5$ V, $T_a = 25$ °C

** I_{CC} is measured with data inputs grounded and output control inputs at 4.5 V.

Switching Characteristics

(V_{CC} = 5 V, Ta = 25°C)

Item	Symbol	min.	typ.	max.	Unit	Condition
Propagation delay time	t _{PLH}	—	7	15	ns	C _L = 45 pF, R _L = 667 Ω
	t _{PHL}	—	12	18		
Output enable time	t _{ZH}	—	18	35	ns	C _L = 5 pF, R _L = 667 Ω
	t _{ZL}	—	28	45		
Output disable time	t _{HZ}	—	—	32		
	t _{LZ}	—	—	35		

Note: Refer to Test Circuit and Waveform of the Common Item "TTL Common Matter (Document No.: REJ27D0005-0100)".

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Package Dimensions

JEITA Package Code P-SOP16-5.5x10.06-1.27	RENESAS Code PRSP0016DH-B	Previous Code FP-16DAV	MASS[Typ.] 0.24g
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NOTE)
 1. DIMENSIONS*1 (Nom) AND *2 (Nom)
 DO NOT INCLUDE MOLD FLASH.
 2. DIMENSION*3 DOES NOT
 INCLUDE TRIM OFFSET.

Reference Symbol	Dimension in millimeters		
	Min	Nom	Max
D	—	10.06	10.5
E	—	5.50	—
A ₂	—	—	—
A ₁	0.00	0.10	0.20
A	—	—	2.20
b _p	0.34	0.40	0.46
b ₁	—	—	—
c	0.15	0.20	0.25
c ₁	—	—	—
θ	0°	—	8°
H _E	7.50	7.80	8.00
[e]	—	1.27	—
x	—	—	0.15
y	—	—	0.15
z	—	—	0.80
L	0.50	0.70	—
L ₁	—	1.15	—

The technical drawing illustrates a mechanical assembly, likely a conveyor system, with the following components and dimensions:

- Base:** A horizontal beam with a total length of L .
- Left Support:** A vertical support structure with a height of A and a horizontal distance of b_b from the base.
- Right Support:** A vertical support structure with a height of A and a horizontal distance of $b_b + 3$ from the base.
- Shaft:** A horizontal shaft extending from the right support, with a bearing symbol and a gear symbol labeled \textcircled{M} .
- Detail F:** A magnified view of the right support area, showing a stepped base with a height of A_1 and a total width of L_1 . The angle of the support is indicated as θ .

A large, diagonal watermark in red text reads "Not recommended for new design".

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