HD74LS125A

Quadruple Bus Buffer Gates (with three-state outputs)

REJ03D0430–0200
Rev.2.00
Feb.18.2005

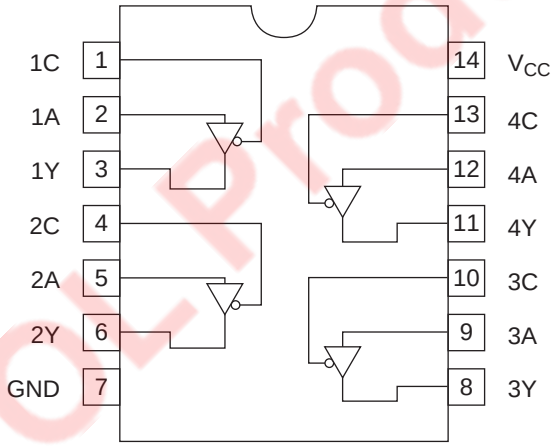
Features

- Ordering Information

Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS125AP	DILP-14 pin	PRDP0014AB-B (DP-14AV)	P	—
HD74LS125AFPEL	SOP-14 pin (JEITA)	PRSP0014DF-B (FP-14DAV)	FP	EL (2,000 pcs/reel)
HD74LS125ARPEL	SOP-14 pin (JEDEC)	PRSP0014DE-A (FP-14DNV)	RP	EL (2,500 pcs/reel)

Note: Please consult the sales office for the above package availability.

Pin Arrangement



(Top view)

Function Table

Inputs		Outputs
C	A	Y
H	X	Z
L	L	L
L	H	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
Power dissipation	P_T	400	mW
Storage temperature	Tstg	–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
High level output current	I_{OH}	—	—	–2.6	mA
Low level output current	I_{OL}	—	—	24	mA
Operating temperature	Topr	–20	25	75	°C

Electrical Characteristics

(Ta = –20 to +75 °C)

Item	Symbol	min.	typ.*	max.	Unit	Condition	
Input voltage	V_{IH}	2.0	—	—	V		
	V_{IL}	—	—	0.8	V		
Output voltage	V_{OH}	2.4	—	—	V	V_{CC} = 4.75 V, V_{IH} = 2 V, V_{IL} = 0.8 V, I_{OH} = –2.6 mA	
	V_{OL}	—	—	0.5	V	I_{OL} = 24 mA	V_{CC} = 4.75 V, V_{IH} = 2 V, V_{IL} = 0.8 V
		—	—	0.4		I_{OL} = 12 mA	
	I_{OZ}	—	—	20	µA	V_O = 2.4 V	V_{CC} = 5.25 V, V_{IH} = 2 V, V_{IL} = 0.8 V
		—	—	–20		V_O = 0.4 V	
Input current	I_{IH}	—	—	20	µA	V_{CC} = 5.25 V, V_I = 2.7 V	
	I_{IL}	—	—	–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}	—	11	20	mA	V_{CC} = 5.25 V	
Input clamp voltage	V_{IK}	—	—	–1.5	V	V_{CC} = 4.75 V, I_{IN} = –18 mA	

Note: * V_{CC} = 5 V, Ta = 25°C

Switching Characteristics

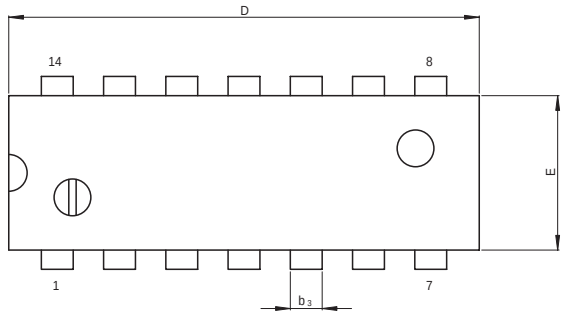
(V_{CC} = 5 V, Ta = 25°C)

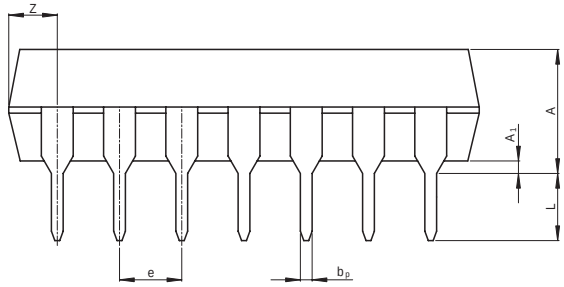
Item	Symbol	min.	typ.	max.	Unit	Condition
Propagation delay time	t_{PLH}	—	9	15	ns	C_L = 45 pF, R_L = 667 Ω
	t_{PHL}	—	7	18		
Output enable time	t_{ZH}	—	12	20		
	t_{ZL}	—	15	25		
Output disable time	t_{HZ}	—	—	20		C_L = 5 pF, R_L = 667 Ω
	t_{LZ}	—	—	20		

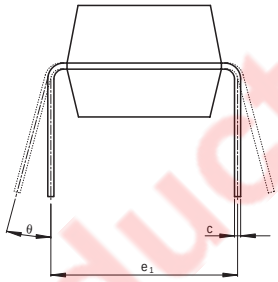
Note: Refer to Test Circuit and Waveform of the Common Item "TTL Common Matter (Document No.: REJ27D0005-0100)".

Package Dimensions

JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
P-DIP14-6.3x19.2-2.54	PRDP0014AB-B	DP-14AV	0.97g



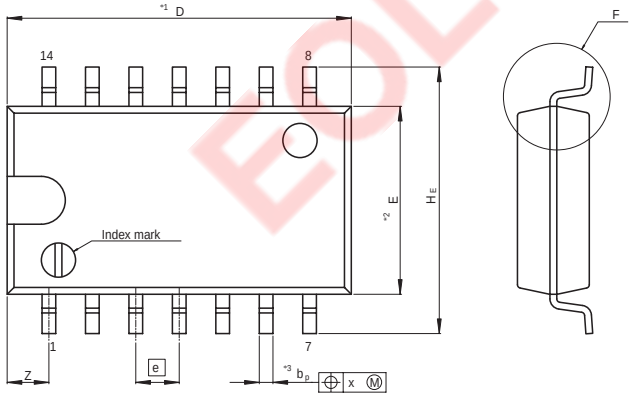


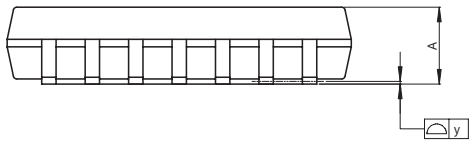


(Ni/Pd/Au plating)

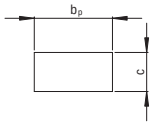
Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
e_1	——	7.62	——
D	——	19.2	20.32
E	——	6.3	7.4
A	——	——	5.06
A_1	0.51	——	——
b_p	0.40	0.48	0.56
b_3	——	1.30	——
c	0.19	0.25	0.31
θ	0°	——	15°
e	2.29	2.54	2.79
Z	——	——	2.39
L	2.54	——	——

JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
P-SOP14-5.5x10.06-1.27	PRSP0014DF-B	FP-14DAV	0.23g

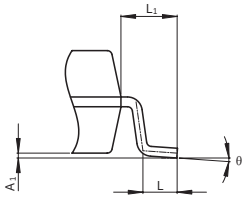




NOTE)
1. DIMENSIONS"*1 (Nom)"AND"*2" DO NOT INCLUDE MOLD FLASH.
2. DIMENSION"*3"DOES NOT INCLUDE TRIM OFFSET.



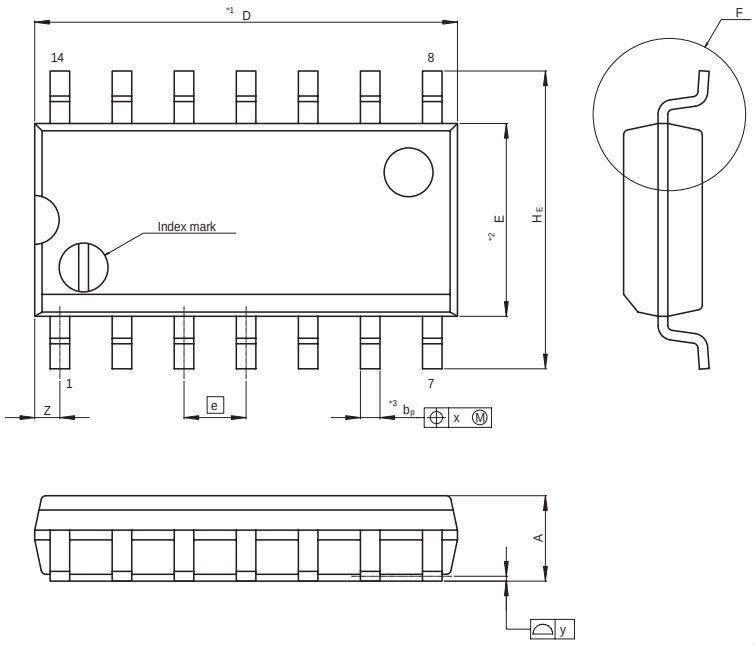
Terminal cross section
(Ni/Pd/Au plating)



Detail F

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	——	——	0.12
y	——	——	0.15
Z	——	——	1.42
L	0.50	0.70	0.90
L_1	——	1.15	——

JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
P-SOP14-3.95x8.65-1.27	PRSP0014DE-A	FP-14DNV	0.13g



NOTE)
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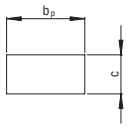
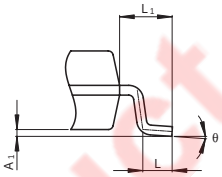
2. DIMENSION"*3"DOES NOT INCLUDE TRIM OFFSET.



Terminal cross section
(Ni/Pd/Au plating)



Detail F

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	——	8.65	9.05
E	——	3.95	——
A_2	——	——	——
A_1	0.10	0.14	0.25
A	——	——	1.75
b_p	0.34	0.40	0.46
b_1	——	——	——
c	0.15	0.20	0.25
c_1	——	——	——
θ	0°	——	8°
H_E	5.80	6.10	6.20
e	——	1.27	——
x	——	——	0.25
y	——	——	0.15
Z	——	——	0.635
L	0.40	0.60	1.27
L_1	——	1.08	——

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http://www.renesas.com

Refer to "**http://www.renesas.com/en/network**" for the latest and detailed information.

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