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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

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

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HD74LS244

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

REJ03D0463-0200

Rev.2.00

Feb.18.2005

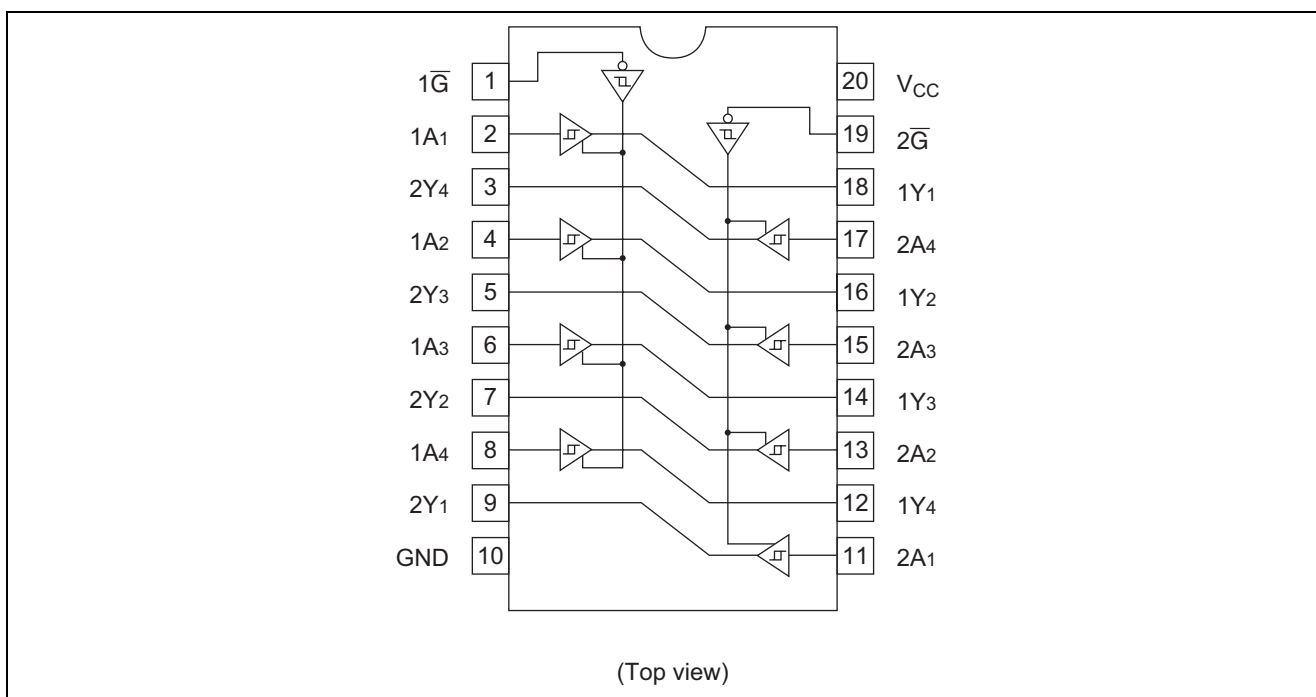
Features

- Ordering Information

Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS244P	DILP-20 pin	PRDP0020AC-B (DP-20NEV)	P	—
HD74LS244FPEL	SOP-20 pin (JEITA)	PRSP0020DD-B (FP-20DAV)	FP	EL (2,000 pcs/reel)
HD74LS244RPEL	SOP-20 pin (JEDEC)	PRSP0020DC-A (FP-20DBV)	RP	EL (1,000 pcs/reel)

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

Pin Arrangement

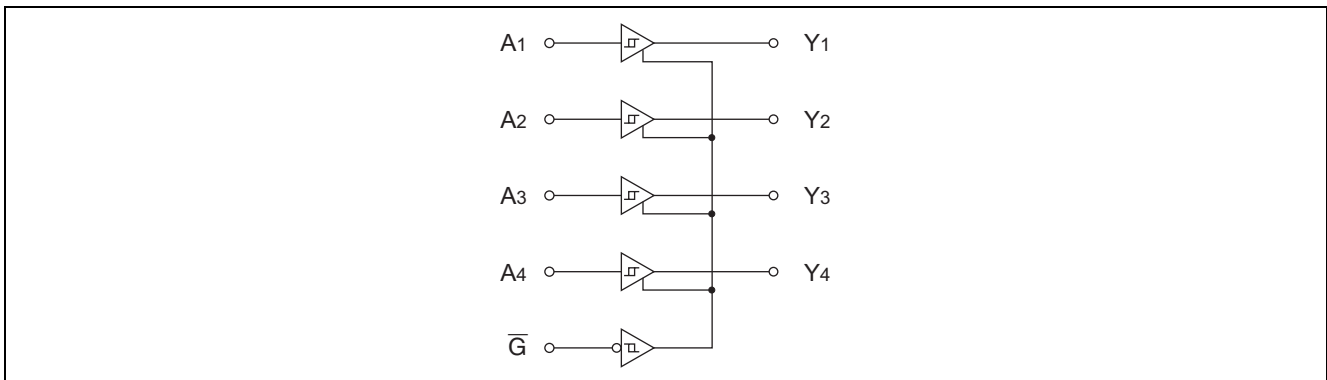


Function Table

Inputs		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

Block Diagram (1/2)



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	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}	—	—	-15	mA
	I_{OL}	—	—	24	mA
Operating temperature	T_{opr}	-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		
Hysteresis	V _{T+} - V _{T-}	0.2	0.4	—	V	V _{CC} = 4.75 V	
Output voltage	V _{OH}	2.4	—	—	V	V _{CC} = 4.75 V, V _{IH} = 2 V	
		2.0	—	—			V _{IL} = 0.8 V, I _{OH} = -3 mA
	V _{OL}	—	—	0.4	V	V _{CC} = 4.75 V, V _{IH} = 2 V, V _{IL} = 0.8 V	
		—	—	0.5			I _{OL} = 12 mA
Off-state output current	I _{ozH}	—	—	20	μA	V _{CC} = 5.25 V, V _{IH} = 2 V, V _{IL} = 0.8 V	
	I _{ozL}	—	—	-20			V _O = 2.7 V
Input current	I _{IH}	—	—	20	μA	V _{CC} = 5.25 V, V _I = 2.7 V	
	I _{IL}	—	—	-0.2	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**	Outputs "H"	I _{CC}	—	13	23	mA	V _{CC} = 5.25 V
	Outputs "L"		—	27	46		
	All outputs disabled		—	32	54		
Input clamp voltage	V _{IK}	—	—	-1.5	V	V _{CC} = 4.75 V, I _{IN} = -18 mA	

Notes: * V_{CC} = 5 V, Ta = 25°C

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

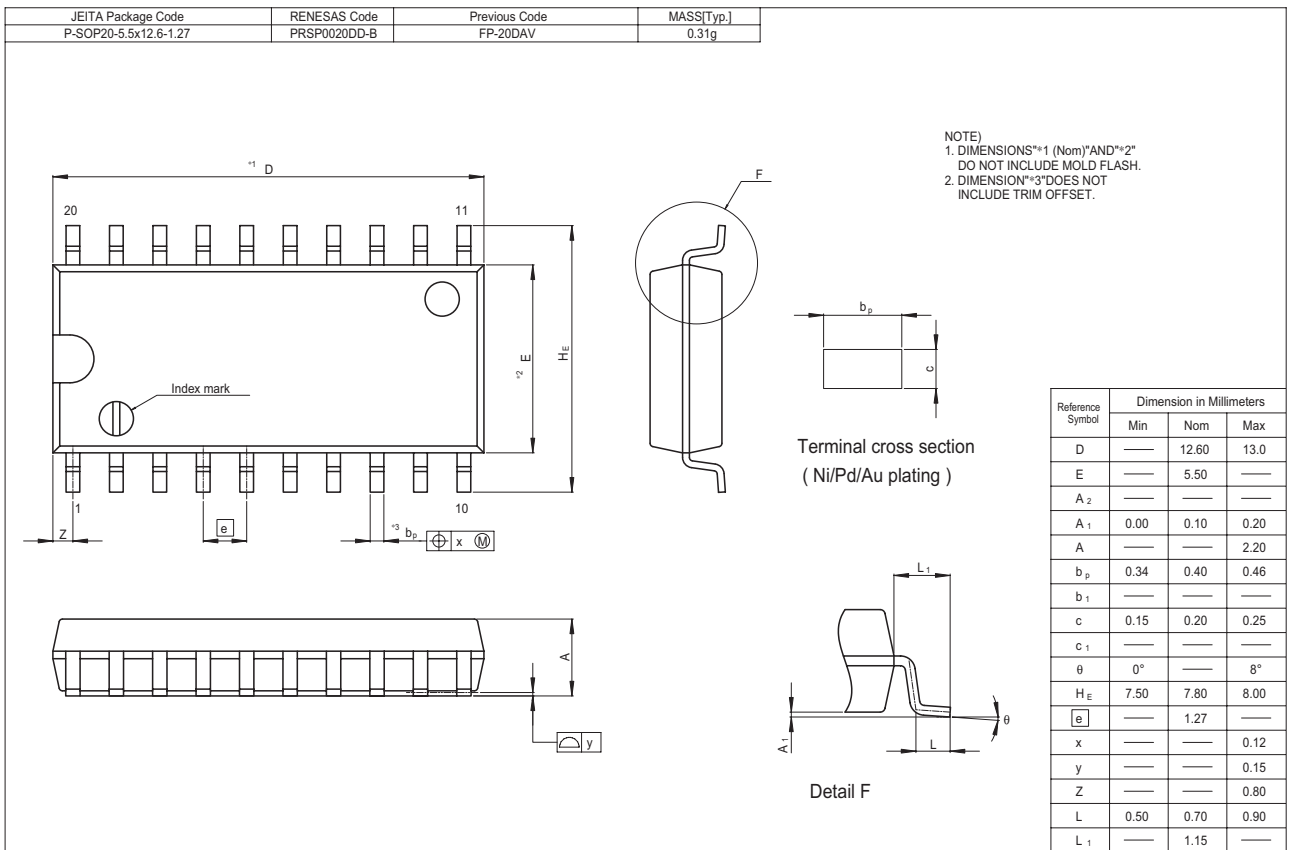
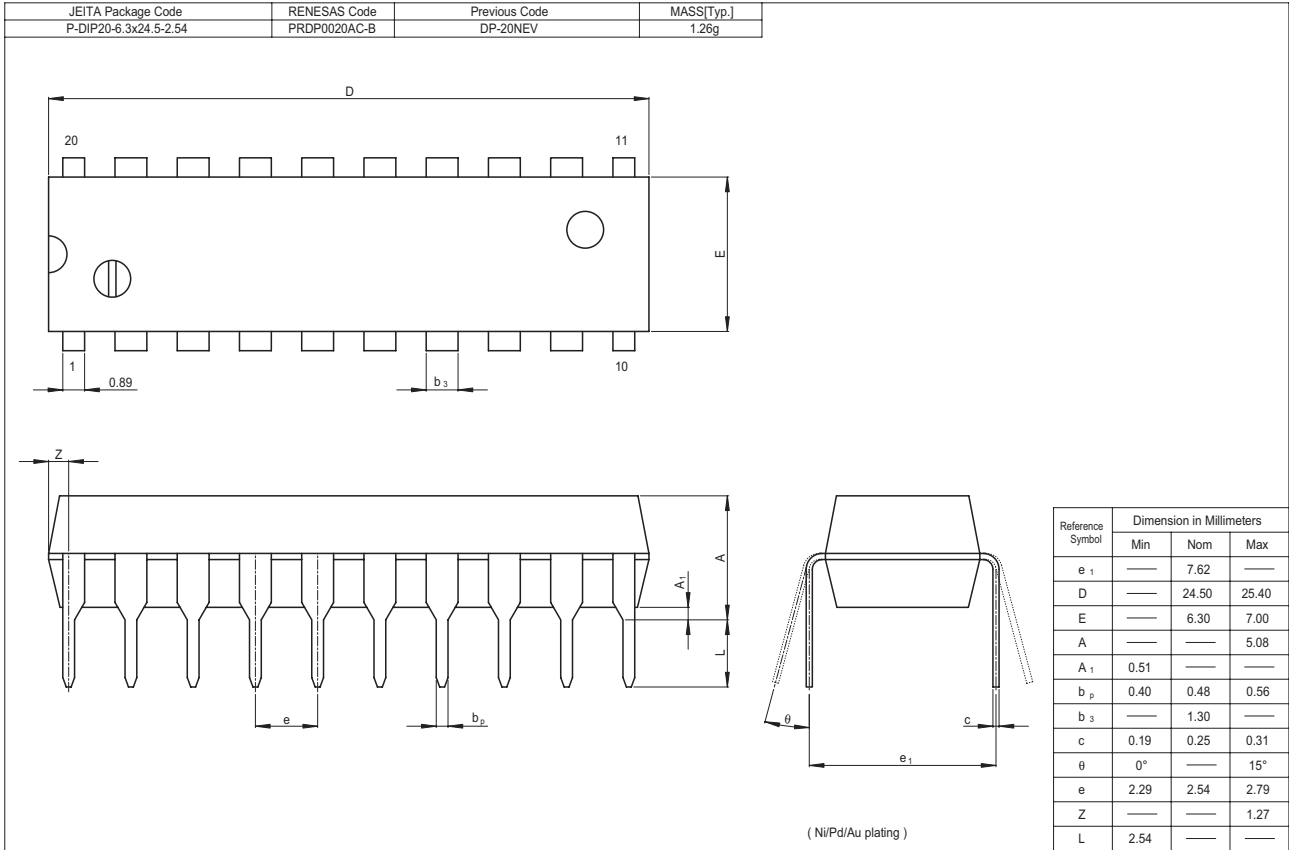
Switching Characteristics

(V_{CC} = 5 V, Ta = 25°C)

Item	Symbol	min.	typ.	max.	Unit	Condition
Propagation delay time	t _{PLH}	—	12	18	ns	C _L = 45 pF, R _L = 667 Ω
	t _{PHL}	—	12	18		
Output enable time	t _{ZL}	—	20	30	ns	
	t _{ZH}	—	15	23	ns	
Output disable time	t _{LZ}	—	15	25	ns	C _L = 5 pF, R _L = 667 Ω
	t _{HZ}	—	10	18	ns	

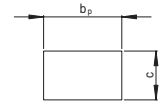
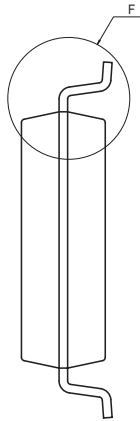
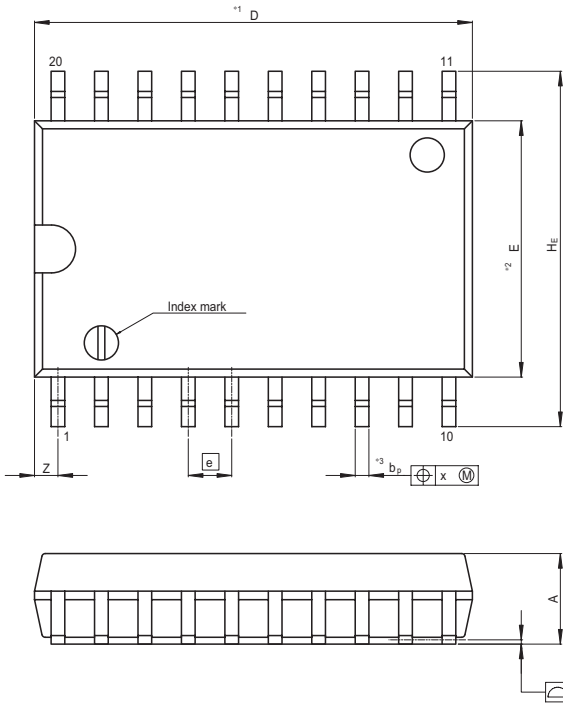
Note: Refer to Test Circuit and Waveform of the Common Item "TTL Common Matter (Document No.: REJ27D0005-0100)".

Package Dimensions

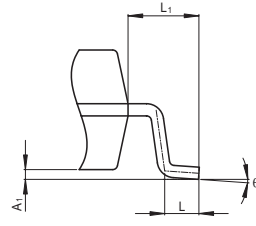


HD74LS244

JEITA Package Code P-SOP20-7.5x12.8-1.27	RENESAS Code PRSP0020DC-A	Previous Code FP-20DBV	MASS[Typ.] 0.52g
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Terminal cross section
(Ni/Pd/Au plating)



Detail F

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

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	—	12.80	13.2
E	—	7.50	—
A ₂	—	—	—
A ₁	0.10	0.20	0.30
A	—	—	2.65
b _p	0.34	0.40	0.46
b ₁	—	—	—
c	0.20	0.25	0.30
c ₁	—	—	—
θ	0°	—	8°
H _E	10.00	10.40	10.65
e	—	1.27	—
x	—	—	0.12
y	—	—	0.15
Z	—	—	0.935
L	0.40	0.70	1.27
L ₁	—	1.45	—

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