

HD74LS240

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

REJ03D0459-0200
Rev.2.00
Feb.18.2005

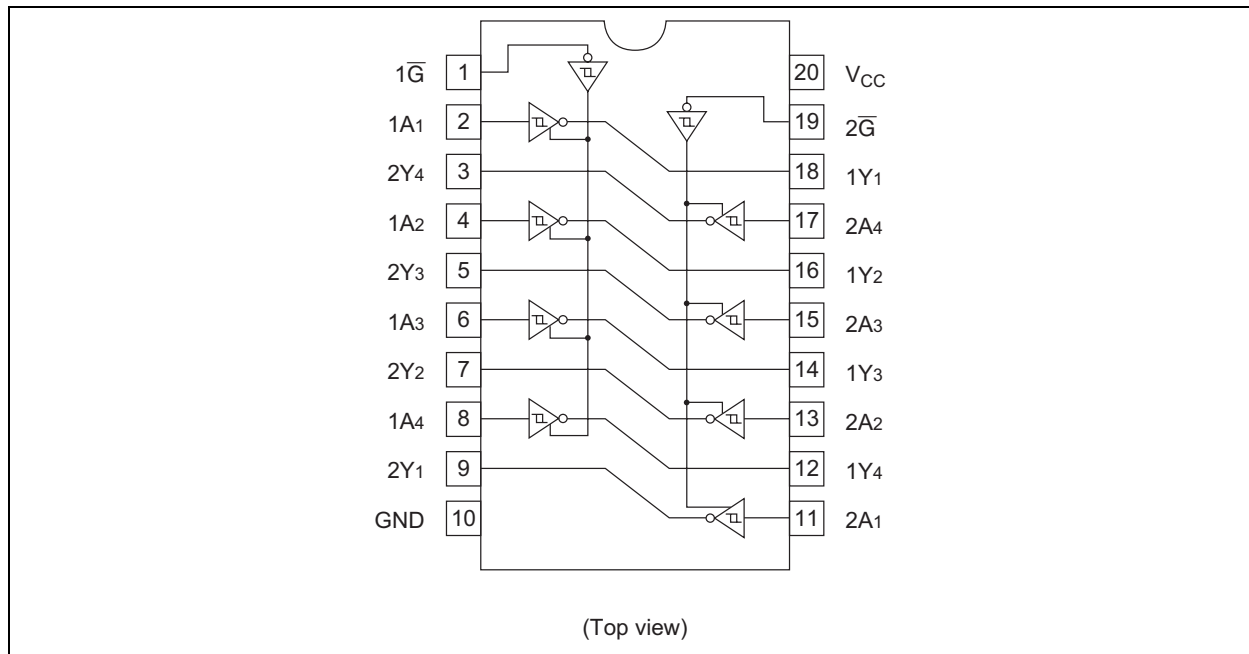
Features

- Ordering Information

Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS240P	DILP-20 pin	PRDP0020AC-B (DP-20NEV)	P	—
HD74LS240FPEL	SOP-20 pin (JEITA)	PRSP0020DD-B (FP-20DAV)	FP	EL (2,000 pcs/reel)
HD74LS240RPEL	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

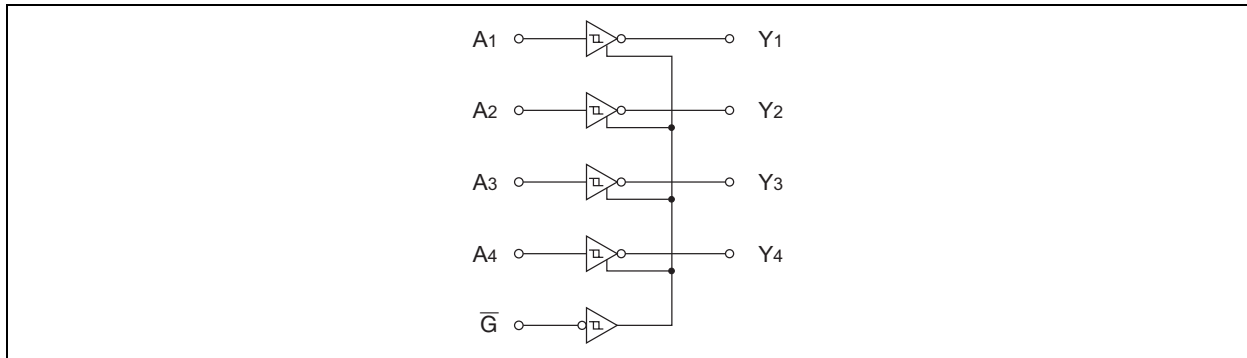


Function Table

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

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 _{IL} = 0.8 V, I _{OH} = -3 mA V _{IL} = 0.5 V, I _{OH} = -15 mA
		2.0	—	—		
	V _{OL}	—	—	0.4	V	I _{OL} = 12 mA I _{OL} = 24 mA
		—	—	0.5		
Off-state output current	I _{OZH}	—	—	20	μA	V _O = 2.7 V
	I _{OZL}	—	—	-20	μA	V _O = 0.4 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 high	—	13	23	mA	V _{CC} = 5.25 V
	Outputs low	—	26	44		
	All outputs disabled	—	29	50		
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.

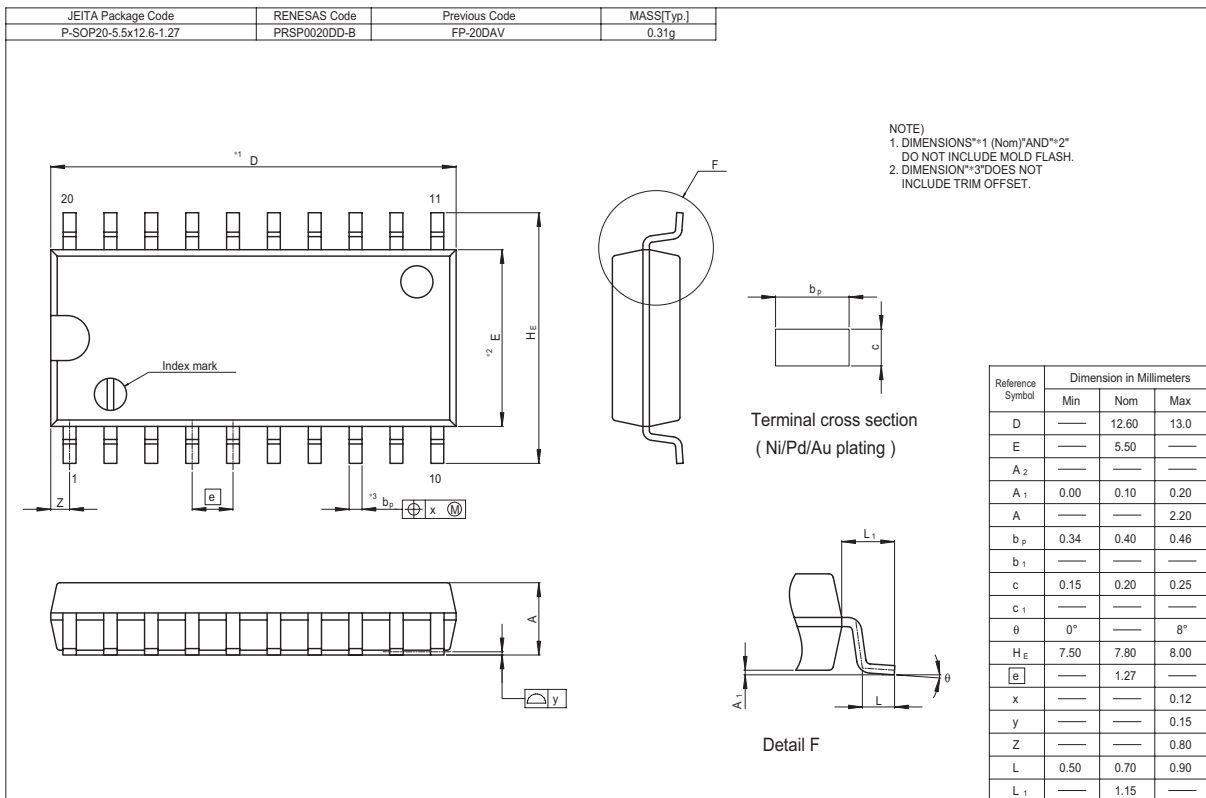
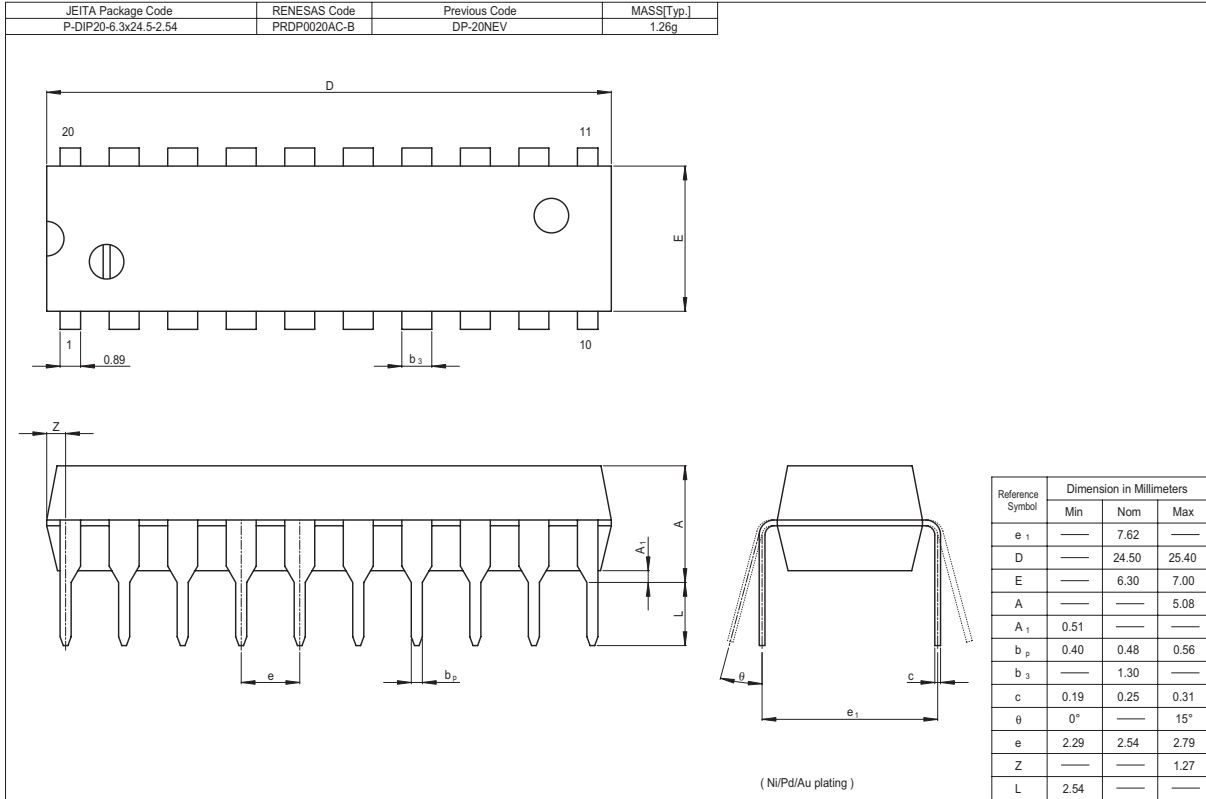
Switching Characteristics

(V_{CC} = 5 V, Ta = 25°C)

Item	Symbol	min.	typ.	max.	Unit	Condition
Propagation delay time	t _{PLH}	—	9	14	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	

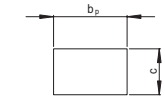
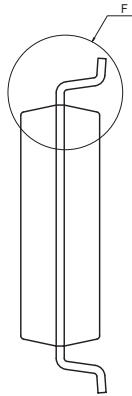
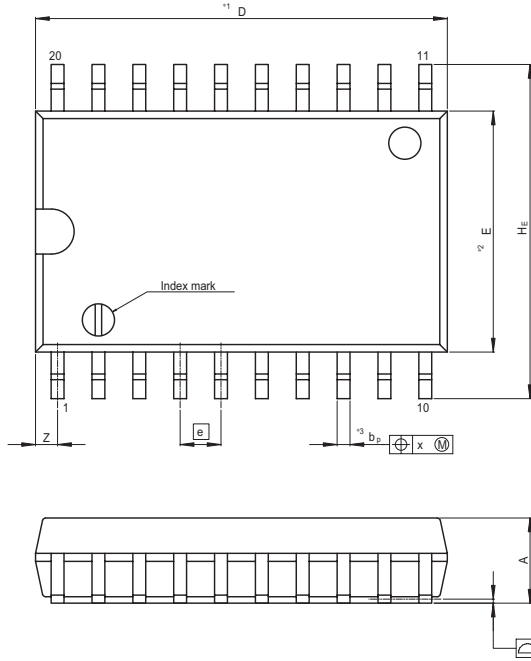
Note: Refer to Test Circuit and Waveform of the Common Item "TTL Common Matter (Document No.: REJ27D0005-0100)".

Package Dimensions

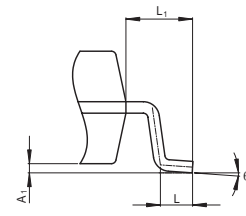


HD74LS240

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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