

HD74LS244

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

REJ03D0463-0200

Rev.2.00

Feb.18.2005

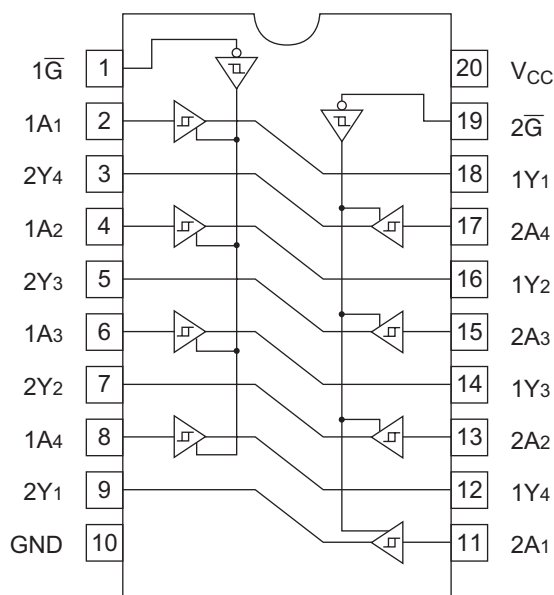
Features

- 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



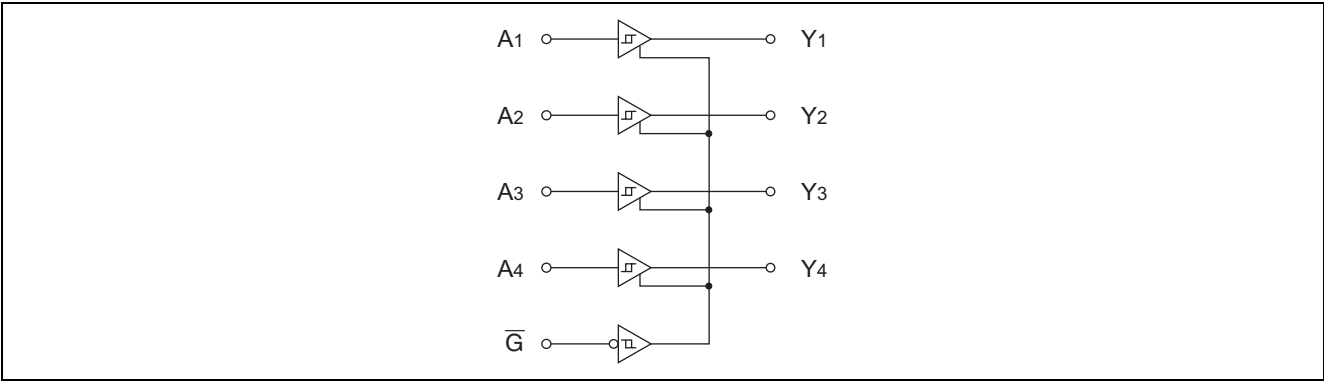
(Top view)

Function Table

Inputs		Output
$\overline{G}$	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	$V_{CC} = 4.75\text{ V}$	
Output voltage		V_{OH}	2.4	—	—	V	$V_{IL} = 0.8\text{ V}$, $I_{OH} = -3\text{ mA}$	
			2.0	—	—		$V_{CC} = 4.75\text{ V}$, $V_{IH} = 2\text{ V}$	
		V_{OL}	—	—	0.4	V	$I_{OL} = 12\text{ mA}$	$V_{CC} = 4.75\text{ V}$, $V_{IH} = 2\text{ V}$, $V_{IL} = 0.8\text{ V}$
			—	—	0.5		$I_{OL} = 24\text{ mA}$	
Off-state output current		I_{OZH}	—	—	20	μA	$V_O = 2.7\text{ V}$	$V_{CC} = 5.25\text{ V}$, $V_{IH} = 2\text{ V}$, $V_{IL} = 0.8\text{ V}$
		I_{OZL}	—	—	-20		$V_O = 0.4\text{ V}$	
Input current		I_{IH}	—	—	20	μA	$V_{CC} = 5.25\text{ V}$, $V_I = 2.7\text{ V}$	
		I_{IL}	—	—	-0.2	mA	$V_{CC} = 5.25\text{ V}$, $V_I = 0.4\text{ V}$	
		I_I	—	—	0.1	mA	$V_{CC} = 5.25\text{ V}$, $V_I = 7\text{ V}$	
Short-circuit output current		I_{OS}	-40	—	-225	mA	$V_{CC} = 5.25\text{ V}$	
Supply current**	Outputs "H"	I_{CC}	—	13	23	mA	$V_{CC} = 5.25\text{ V}$	
	Outputs "L"		—	27	46			
	All outputs disabled		—	32	54			
Input clamp voltage		V_{IK}	—	—	-1.5	V	$V_{CC} = 4.75\text{ V}$, $I_{IN} = -18\text{ mA}$	

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

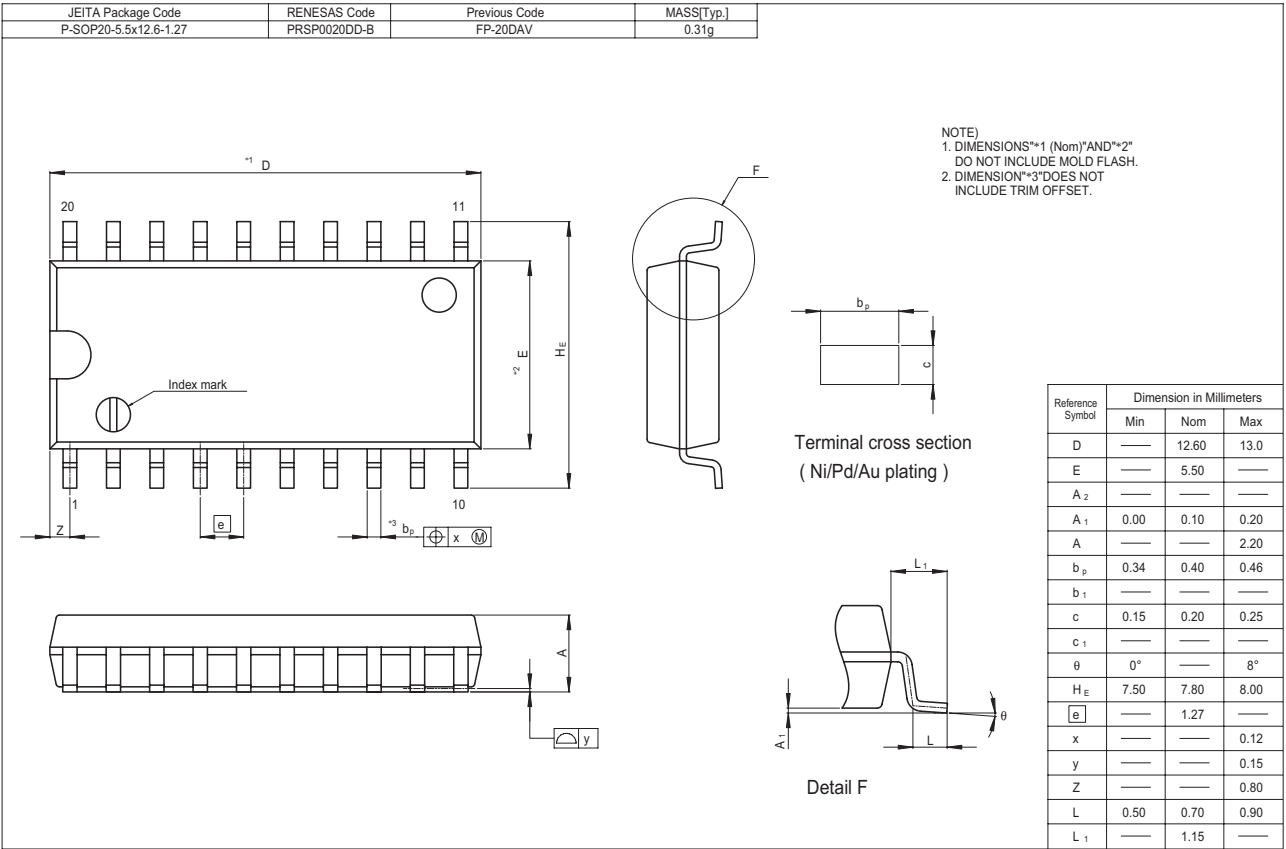
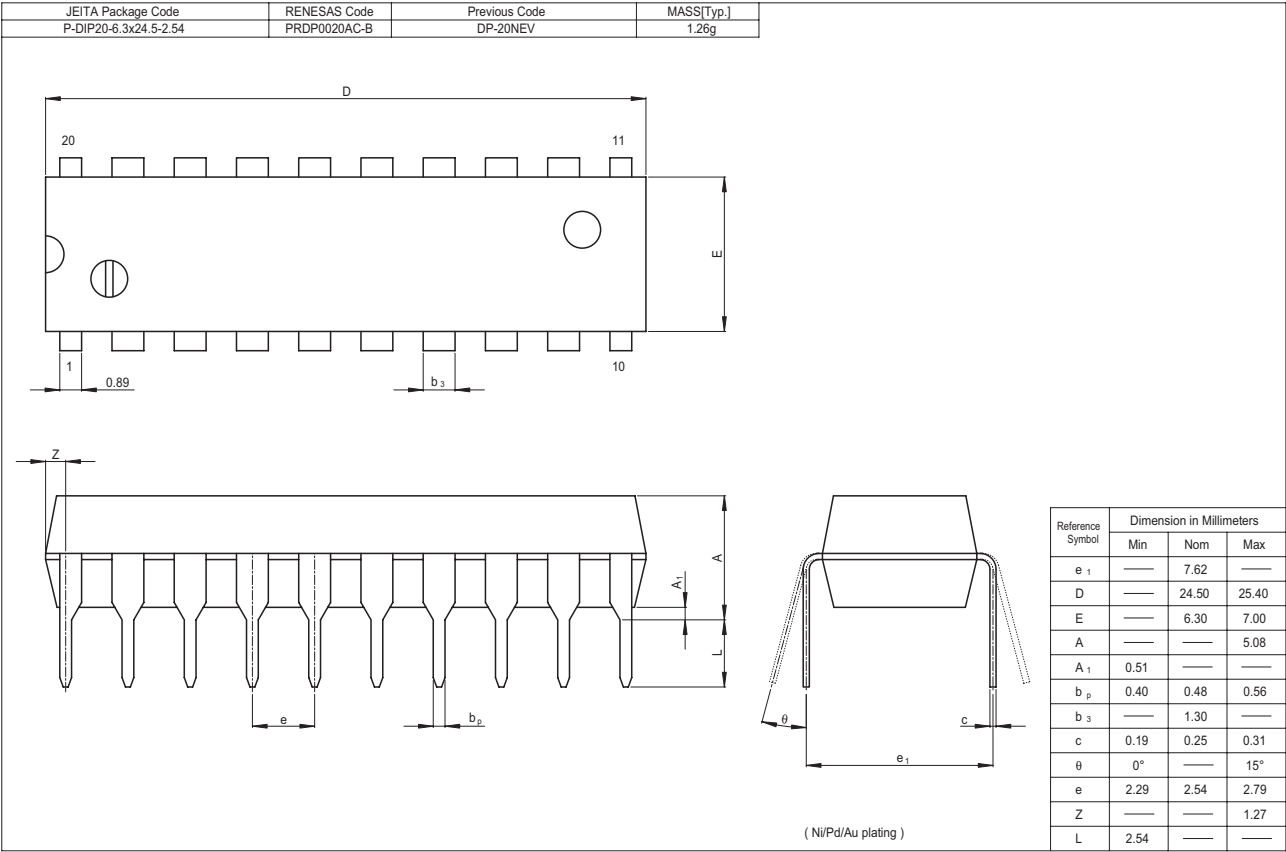
Switching Characteristics

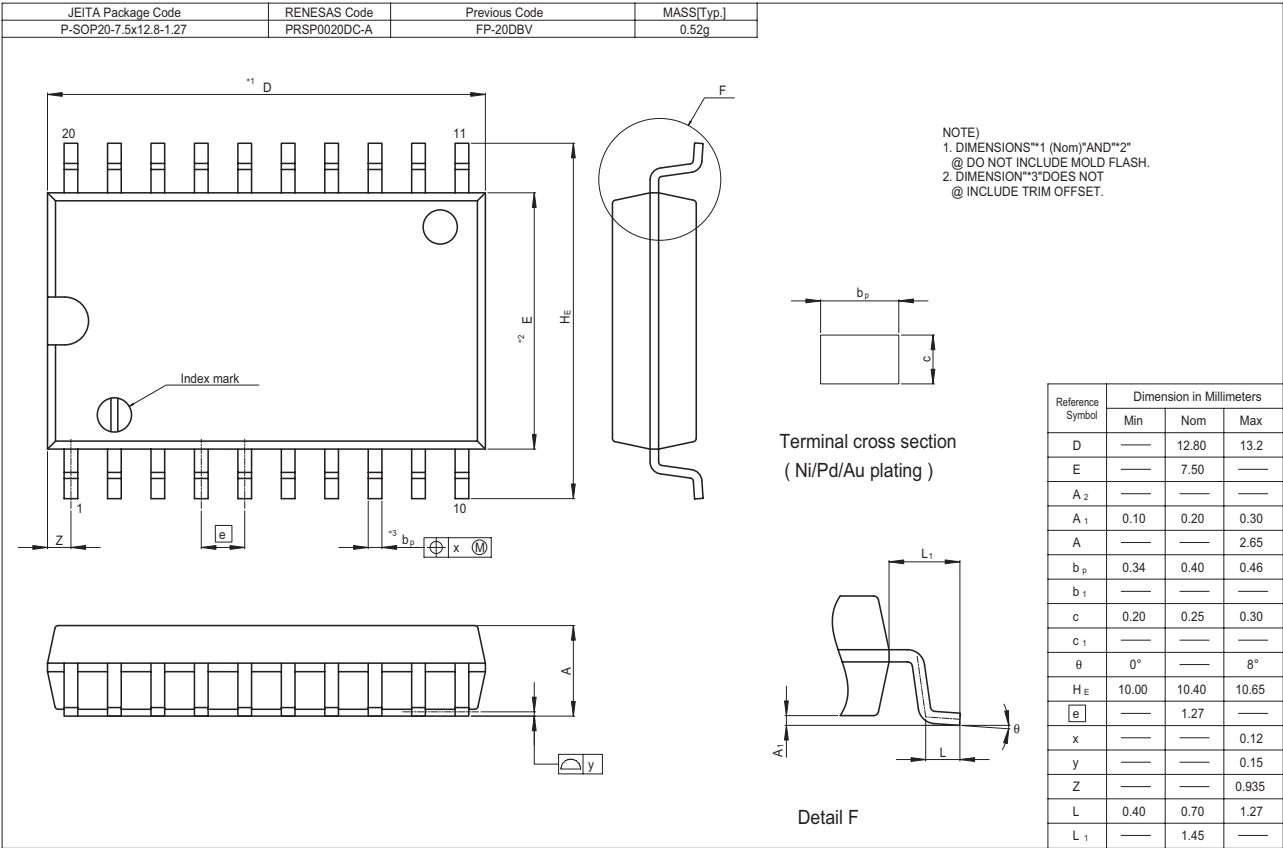
(V_{CC} = 5 V, Ta = 25°C)

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





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