

HD74LS244

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

REJ03D0463-0200 Rev.2.00 Feb.18.2005

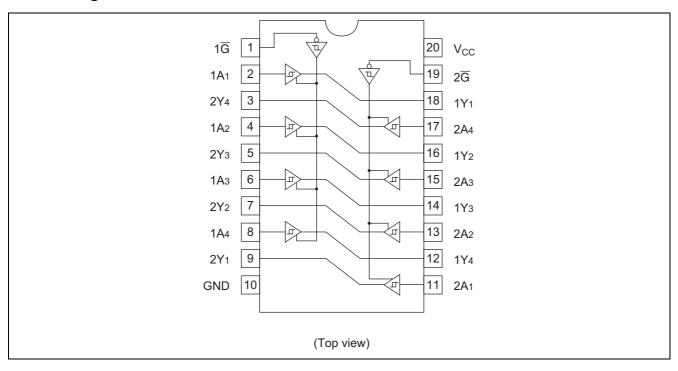
Features

• Ordering Information

Part Name	Package Type	Package Code (Previous Code)	Package Abbreviation	Taping Abbreviation (Quantity)
HD74LS244P	DILP-20 pin	PRDP0020AC-B (DP-20NEV)	Р	_
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

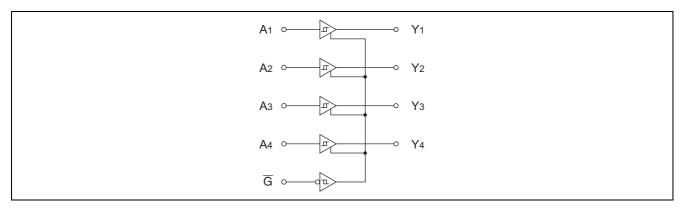


Function Table

Inp	Output	
G	Α	Y
Н	X	Z
L	Н	Н
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	Vcc	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	Тур	Max	Unit
Supply voltage	V _{CC}	4.75	5.00	5.25	V
Output current	I _{OH}			–15	mA
Output current	I _{OL}			24	mA
Operating temperature	Topr	-20	25	75	°C

Electrical Characteristics

 $(Ta = -20 \text{ to } +75 \text{ }^{\circ}\text{C})$

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	
			2.4	_	_	V	$V_{IL} = 0.8 \text{ V}, I_{OH} = -3 \text{ mA}$ $V_{CC} = 4.75 \text{ V},$	
Output volt	000	V_{OH}	2.0	_	_	V	$V_{IL} = 0.5 \text{ V}, I_{OH} = -15 \text{ mA}$ $V_{IH} = 2 \text{ V}$	
Output volt	age	W	_	_	0.4	V	$I_{OL} = 12 \text{ mA}$ $V_{CC} = 4.75 \text{ V}, V_{IH} = 2 \text{ V},$	
		V_{OL}	_	_	0.5	V	$I_{OL} = 24 \text{ mA}$ $V_{IL} = 0.8 \text{ V}$	
Off state of	italit alirrant	l _{ozh}	_	_	20	^	$V_{O} = 2.7 \text{ V}$ $V_{CC} = 5.25 \text{ V}, V_{IH} = 2 \text{ V},$	
On-State of	utput current	I _{OZL}	_	_	-20	μΑ	$V_0 = 0.4 \text{ V}$ $V_{IL} = 0.8 \text{ V}$	
			_	_	20	μΑ	$V_{CC} = 5.25 \text{ V}, V_{I} = 2.7 \text{ V}$	
Input curre	nt	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-circu current	it output	I _{OS}	-40	_	-225	mA	V _{CC} = 5.25 V	
	Outputs "H"		_	13	23			
Supply current**	Outputs "L"	Icc	_	27	46	mA	V _{CC} = 5.25 V	
	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: $V_{CC} = 5 \text{ V}$, $Ta = 25^{\circ}C$

Switching Characteristics

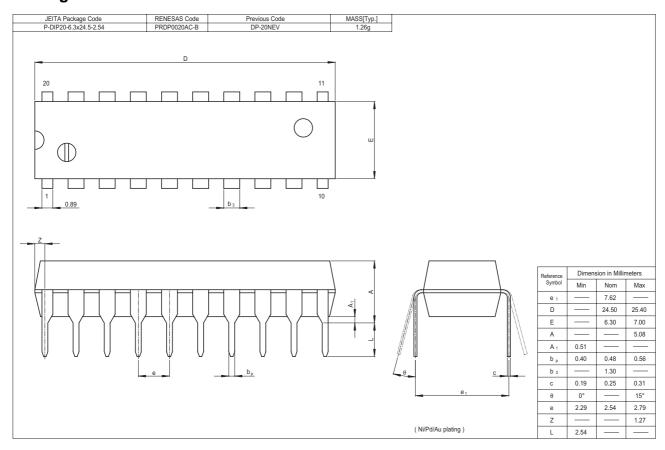
 $(V_{CC} = 5 \text{ V}, \text{ Ta} = 25^{\circ}\text{C})$

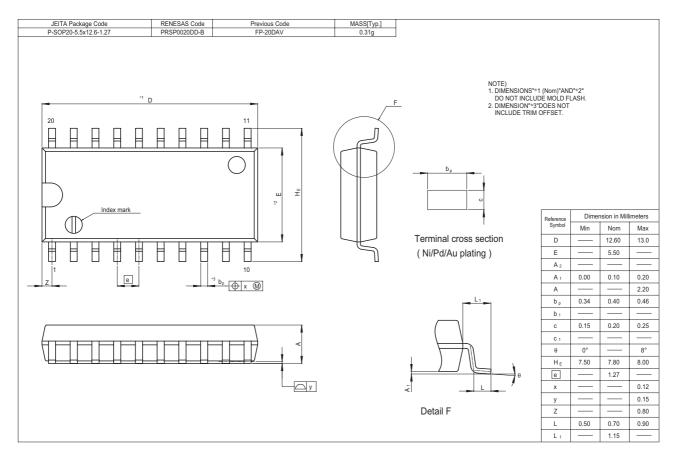
Item	Symbol	min.	typ.	max.	Unit	Condition
Dranagation dalay time	t _{PLH}	_	12	18	20	$C_L = 45 \text{ pF}, R_L = 667 \Omega$
Propagation delay time	t _{PHL}	_	12	18	ns	
Output anable time	t _{ZL}	_	20	30	ns	
Output enable time	t _{zH}	_	15	23	ns	
Output disable time	t_{LZ}	_	15	25	ns	$C_L = 5 \text{ pF}, R_L = 667 \Omega$
Output disable time	t _{HZ}	_	10	18	ns	$C_{L} = 5 \text{ pr}, K_{L} = 607 \text{ sz}$

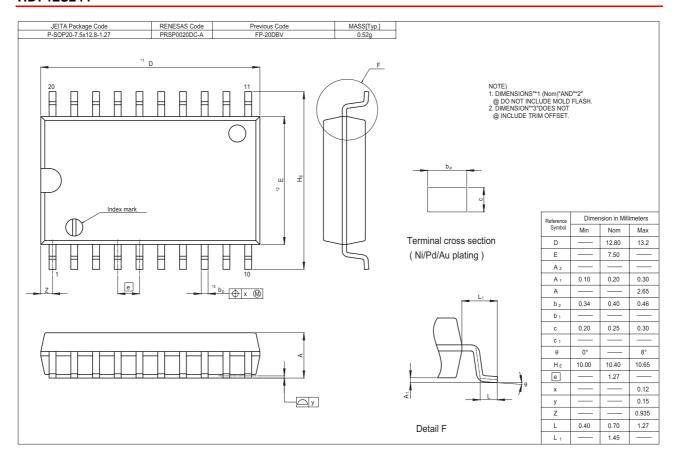
Note: Refer to Test Circuit and Waveform of the Common Item "TTL Common Matter (Document No.: REJ27D0005-0100)".

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

Package Dimensions







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