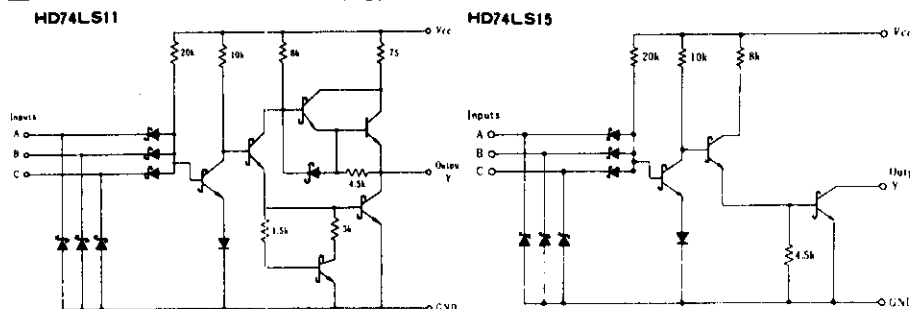


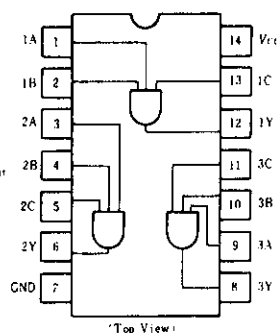
HD74LS11/HD74LS15

●Triple 3-input Positive AND Gates
●Triple 3-input Positive AND Gates
(with Open Collector Outputs)

■CIRCUIT SCHEMATIC(1/3)



■PIN ARRANGEMENT



■HD74LS15 RECOMMENDED OPERATING CONDITIONS

Item	Symbol	min	typ	max	Unit
High level output voltage	V_{OH}	—	—	5.5	V
Low level output current	I_{OL}	—	—	8	mA

■ELECTRICAL CHARACTERISTICS ($T_a = -20 \sim +75^\circ\text{C}$)

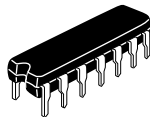
Item	Symbol	Test Conditions	HD74LS11			HD74LS15			Unit
			min	typ*	max	min	typ*	max	
Input voltage	V_{IH}		2.0	—	—	2.0	—	—	V
	V_{IL}		—	—	0.8	—	—	0.8	V
Output voltage	V_{OH}	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$, $I_{OH} = -400\mu\text{A}$	2.7	—	—	—	—	—	V
	V_{OL}	$V_{CC} = 4.75\text{V}$, $V_{IL} = 0.8\text{V}$, $I_{OL} = 8\text{mA}$	—	—	0.5	—	—	0.5	V
		$I_{OL} = 4\text{mA}$	—	—	0.4	—	—	0.4	
Input current	I_{IH}	$V_{CC} = 5.25\text{V}$, $V_I = 2.7\text{V}$	—	—	20	—	—	20	μA
	I_{IL}	$V_{CC} = 5.25\text{V}$, $V_I = 0.4\text{V}$	—	—	-0.4	—	—	-0.4	mA
	I_I	$V_{CC} = 5.25\text{V}$, $V_I = 7\text{V}$	—	—	0.1	—	—	0.1	mA
Output current	I_{OH}	$V_{CC} = 4.75\text{V}$, $V_{OH} = 5.5\text{V}$	—	—	—	—	—	100	μA
Short-circuit output current	I_{OS}	$V_{CC} = 5.25\text{V}$	-20	—	-100	—	—	—	mA
Supply current	I_{CCH}	$V_{CC} = 5.25\text{V}$	—	1.8	3.6	—	1.8	3.6	mA
	I_{CCL}	$V_{CC} = 5.25\text{V}$	—	3.3	6.6	—	3.3	6.6	mA
Input clamp voltage	V_{IK}	$V_{CC} = 4.75\text{V}$, $I_{IN} = -18\text{mA}$	—	—	-1.5	—	—	-1.5	V

* $V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$

■SWITCHING CHARACTERISTICS ($V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$)

Item	Symbol	Test Conditions	HD74LS11			HD74LS15			Unit
			min	typ	max	min	typ	max	
Propagation delay time	t_{PLH}	$C_L = 15\text{pF}$, $R_L = 2\text{k}\Omega$	—	8	15	—	20	35	ns
	t_{PHL}		—	10	20	—	17	35	ns

Note) Refer to Test Circuit and Waveform of the Common Item



Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g



*Dimension including the plating thickness
Base material dimension

Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g

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