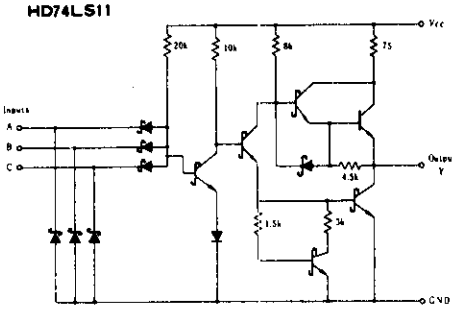
HD74LS11/HD74LS15

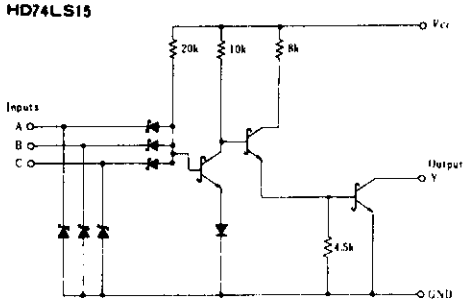
●Triple 3-input Positive AND Gates
●Triple 3-input Positive AND Gates (with Open Collector Outputs)

■CIRCUIT SCHEMATIC(⅓)

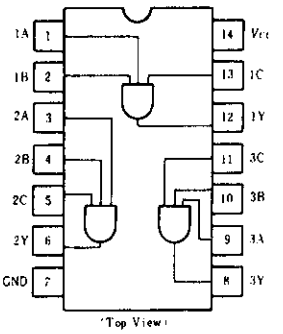
HD74LS11



HD74LS15



■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 ($Ta=-20\sim+75°C$)

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}	$V_{CC}=4.75V$, $V_{IH}=2V$, $I_{OH}=-400\mu A$		2.7	–	–	–	–	–	V
	V_{OL}	$V_{CC}=4.75V$, $V_{IL}=0.8V$	$I_{OL}=8mA$	–	–	0.5	–	–	0.5	V
			$I_{OL}=4mA$	–	–	0.4	–	–	0.4	
Input current	I_{IH}	$V_{CC}=5.25V$, $V_I=2.7V$		–	–	20	–	–	20	μA
	I_{IL}	$V_{CC}=5.25V$, $V_I=0.4V$		–	–	−0.4	–	–	−0.4	mA
	I_I	$V_{CC}=5.25V$, $V_I=7V$		–	–	0.1	–	–	0.1	mA
Output current	I_{OH}	$V_{CC}=4.75V$, $V_{OH}=5.5V$		–	–	–	–	–	100	μA
Short-circuit output current	I_{OS}	$V_{CC}=5.25V$		−20	–	−100	–	–	–	mA
Supply current	I_{CCH}	$V_{CC}=5.25V$		–	1.8	3.6	–	1.8	3.6	mA
	I_{CCL}	$V_{CC}=5.25V$		–	3.3	6.6	–	3.3	6.6	mA
Input clamp voltage	V_{IK}	$V_{CC}=4.75V$, $I_{IN}=-18mA$		–	–	−1.5	–	–	−1.5	V

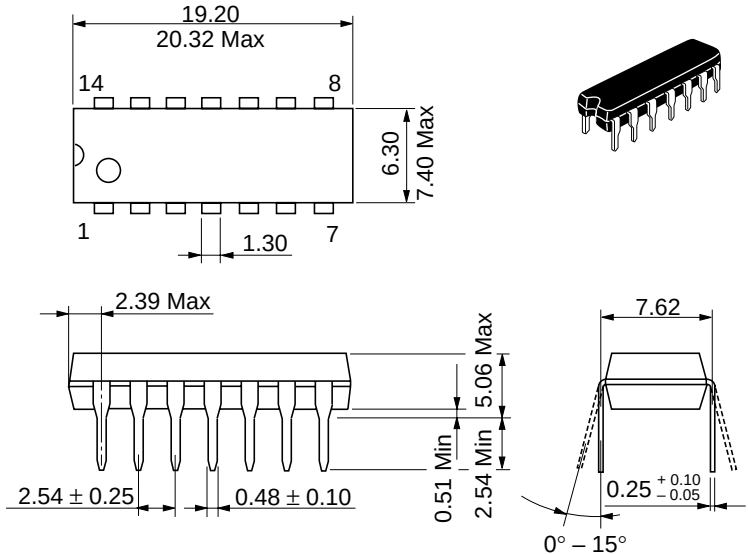
* V_{CC}=5V, Ta=25°C

■SWITCHING CHARACTERISTICS ($V_{CC}=5V$, $Ta=25°C$)

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

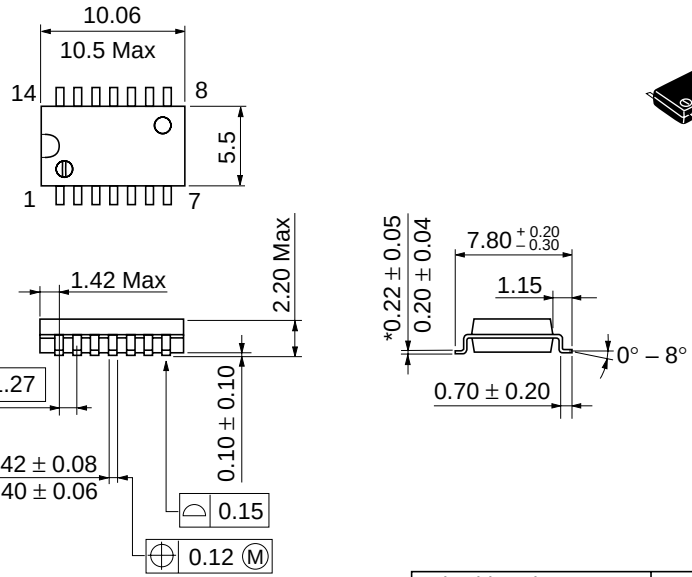
Note) Refer to Test Circuit and Waveform of the Common Item

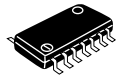
Unit: mm



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

Unit: mm

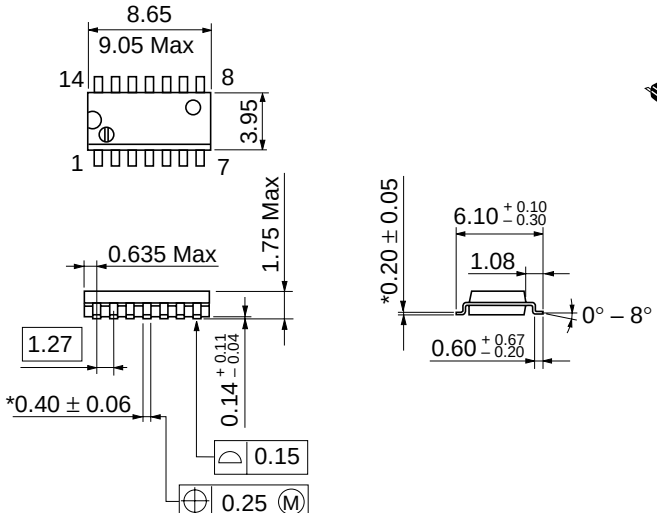




Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g

*Dimension including the plating thickness
Base material dimension

Unit: mm



Hitachi Code	FP-14DN
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.13 g

*Pd plating

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