

IEC Logic Symbol



Truth Table

A	B	Y
L	L	H
L	H	H
H	L	H
H	H	L

Operating Ranges

Characteristics	Symbol	Rating	Unit
Supply voltage	V _{CC}	2.0 to 6.0	V
Input voltage	V _{IN}	0 to V _{CC}	V
Output voltage	V _{OUT}	0 to V _{CC}	V
Operating temperature	T _{opr}	−40 to 85	°C
Input rise and fall time	t _r , t _f	0 to 1000 (V _{CC} = 2.0 V)	ns
		0 to 500 (V _{CC} = 4.5 V)	
		0 to 400 (V _{CC} = 6.0 V)	

Electrical Characteristics

DC Characteristics

Characteristics	Symbol	Test Condition		Ta = 25°C			Ta = -40 to 85°C		Unit
				V _{CC} (V)	Min	Typ.	Max	Min	Max
High-level input voltage	V _{IH}	—		2.0	1.5	—	—	1.5	V
				4.5	3.15	—	—	3.15	
				6.0	4.2	—	—	4.2	
Low-level input voltage	V _{IL}	—		2.0	—	—	0.5	—	
				4.5	—	—	1.35	—	
				6.0	—	—	1.8	—	
High-level output voltage	V _{OH}	V _{IN} = V _{IH} or V _{IL}	I _{OH} = -20 µA	2.0	1.9	2.0	—	1.9	V
				4.5	4.4	4.5	—	4.4	
				6.0	5.9	6.0	—	5.9	
			I _{OH} = -2 mA	4.5	4.18	4.31	—	4.13	
			I _{OH} = -2.6 mA	6.0	5.68	5.80	—	5.63	
Low-level output voltage	V _{OL}	V _{IN} = V _{IH}	I _{OL} = 20 µA	2.0	—	0.0	0.1	—	
				4.5	—	0.0	0.1	—	
				6.0	—	0.0	0.1	—	
			I _{OL} = 2 mA	4.5	—	0.17	0.26	—	
			I _{OL} = 2.6 mA	6.0	—	0.18	0.26	—	
Input leakage current	I _{IN}	V _{IN} = V _{CC} or GND		6.0	—	—	±0.1	—	µA
Quiescent supply current	I _{CC}	V _{IN} = V _{CC} or GND		6.0	—	—	1.0	—	µA

Output currents are 1/2 compared to TC74HC series models.

AC Characteristics ($C_L = 15\text{pF}$, Input: $t_r = t_f = 6\text{ ns}$, $V_{CC} = 5\text{V}$)

Characteristics	Symbol	Test Condition	Ta = 25°C			Unit
			Min	Typ.	Max	
Output transition time	t_{TLH} t_{THL}	—	—	5	10	ns
Propagation delay time	t_{pLH} t_{pHL}	—	—	7	15	ns

AC Characteristics ($C_L = 50\text{pF}$, Input: $t_r = t_f = 6\text{ ns}$)

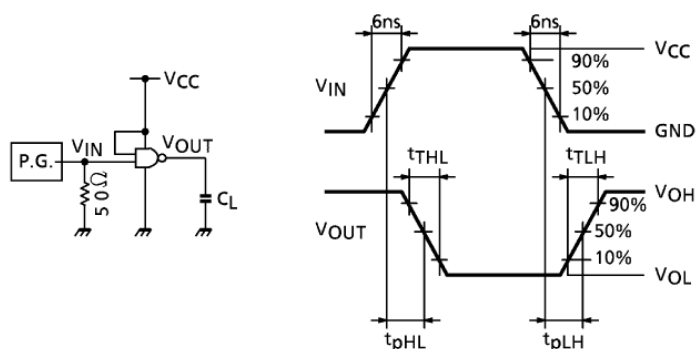
Characteristics	Symbol	Test Condition	V _{CC} (V)	Ta = 25°C			Ta = -40 to 85°C		Unit
				Min	Typ.	Max	Min	Max	
Output transition time	t_{TLH} t_{THL}	—	2.0	—	50	125	—	155	ns
			4.5	—	14	25	—	31	
			6.0	—	12	21	—	26	
Propagation delay time	t_{pLH} t_{pHL}	—	2.0	—	48	100	—	125	ns
			4.5	—	12	20	—	25	
			6.0	—	9	17	—	21	
Input capacitance	C _{IN}	—	—	—	5	10	—	10	pF
Power dissipation capacitance	C _{PD}	(Note 1)	—	—	10	—	—	—	pF

Note 1: C_{PD} is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load.

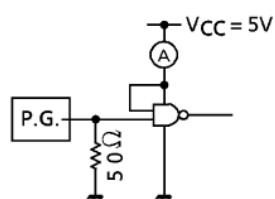
Average operating current can be obtained by the equation:

$$I_{CC(\text{opr.})} = C_{PD} \cdot V_{CC} \cdot f_{IN} + I_{CC}$$

Switching Characteristics Test Circuit



I_{CC (opr)} Test Circuit

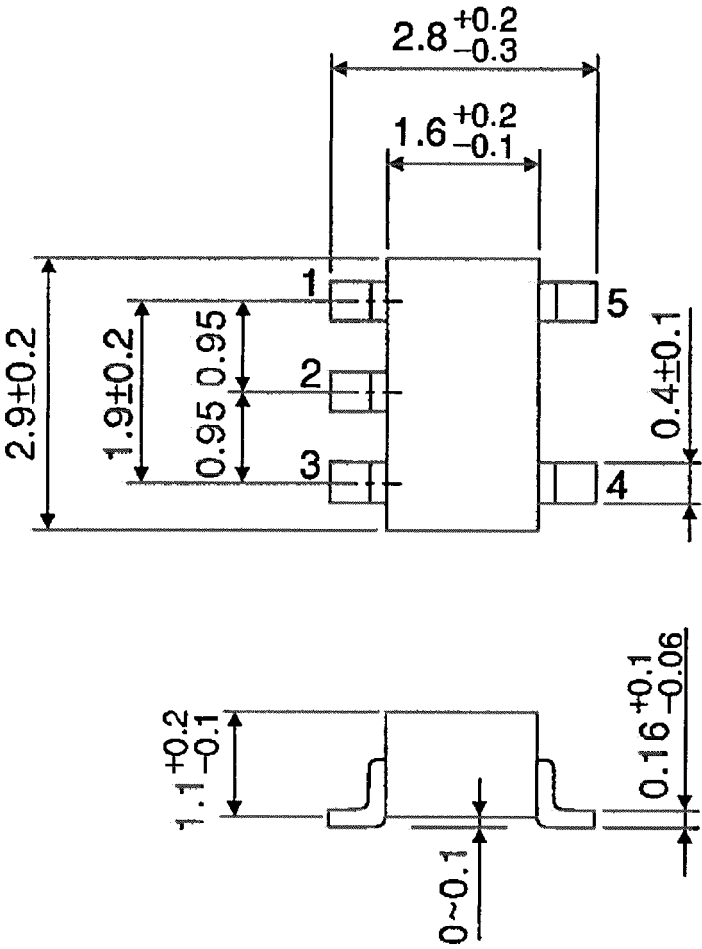


Input waveform is the same as that in case of switching characteristics test.

Package Dimensions

SSOP5-P-0.95

Unit : mm

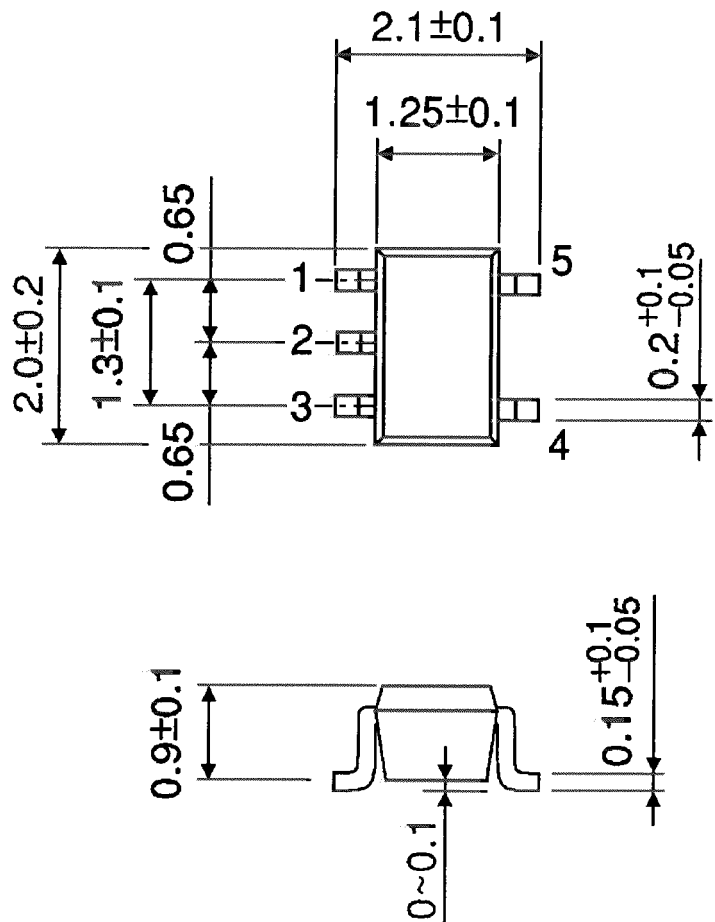


Weight: 0.016 g (Typ.)

Package Dimensions

SSOP5-P-0.65A

Unit : mm



Weight: 0.006 g (Typ.)

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