

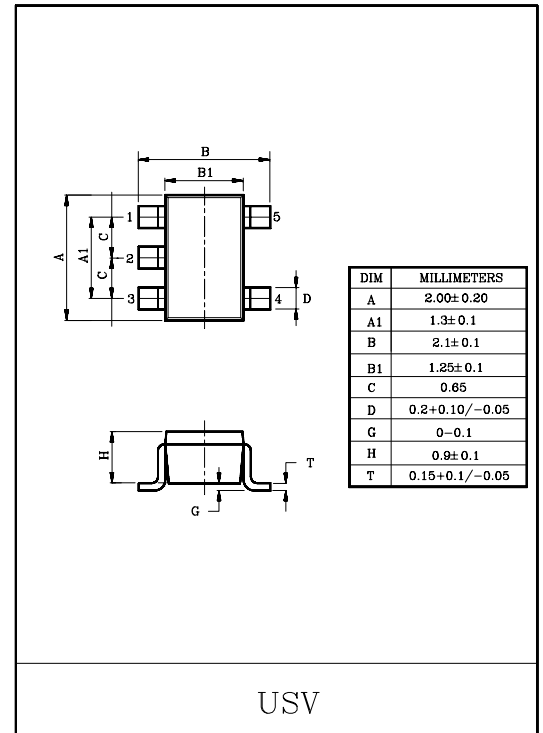
2 INPUT NAND GATE

FEATURES

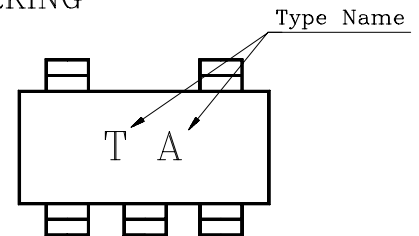
- High Output Drive : $\pm 24\text{mA}$ (Typ.)
@ $V_{CC}=3\text{V}$
- Super High Speed Operation : $t_{PD}=2.4\text{ns}$ (Typ.)
@ $V_{CC}=5\text{V}$, 50pF
- Operation Voltage Range : $V_{CC(\text{opr})}=1.8\sim 5.5\text{V}$.
- Supply Voltage Data Retention : $V_{CC}=1.5\sim 5.5\text{V}$.
- 5V Tolerant Function

MAXIMUM RATINGS

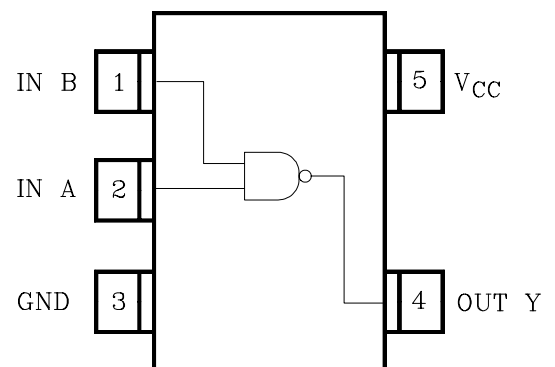
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage Range	V_{CC}	$-0.5\sim 6$	V
DC Input Voltage	V_{IN}	$-0.5\sim 6$	V
DC Output Voltage	V_{OUT}	$-0.5\sim 6$	V
Input Diode Current	I_{IK}	± 20	mA
Output Diode Current	I_{OK}	± 20	mA
DC Output Current	I_{OUT}	± 50	mA
DC V_{CC} /Ground Current	I_{CC}	± 50	mA
Power Dissipation	P_D	200	mW
Storage Temperature	T_{stg}	$-65\sim 150$	$^{\circ}\text{C}$
Lead Temperature (10s)	T_L	260	$^{\circ}\text{C}$



MARKING

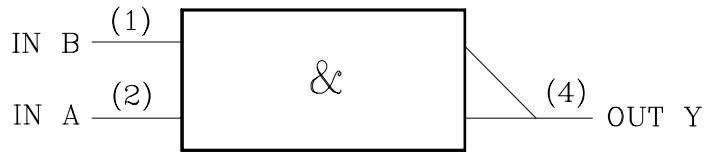


PIN CONNECTION(TOP VIEW)



KIC7SZ00FU

LOGIC DIAGRAM



DC ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION			Ta=25℃			Ta=-40～85℃		UNIT
				V _{CC} (V)	MIN.	TYP.	MAX.	MIN.	MAX.	
High-Level Input Voltage	V _{IH}	-		1.8	0.88 × V _{CC}	-	-	0.88 × V _{CC}	-	V
				2.3 ～ 5.5	0.75 × V _{CC}	-	-	0.75 × V _{CC}	-	
Low-Level Input Voltage	V _{IL}	-		1.8	-	-	0.12 × V _{CC}	-	0.12 × V _{CC}	V
				2.3 ～ 5.5	-	-	0.25 × V _{CC}	-	0.25 × V _{CC}	
High-Level Output Voltage	V _{OH}	V _{IN} =V _{IL}	I _{OH} =-100μA	1.8	1.7	1.8	-	1.7	-	V
				2.3	2.2	2.3	-	2.2	-	
				3.0	2.9	3.0	-	2.9	-	
				4.5	4.4	4.5	-	4.4	-	
			I _{OH} =-8mA	2.3	1.9	2.15	-	1.9	-	
			I _{OH} =-16mA	3.0	2.4	2.8	-	2.4	-	
			I _{OH} =-24mA	3.0	2.3	2.68	-	2.3	-	
			I _{OH} =-32mA	4.5	3.8	4.2	-	3.8	-	
Low-Level Output Voltage	V _{OL}	V _{IN} =V _{IH}	I _{OL} =100μA	1.8	-	0	0.1	-	0.1	V
				2.3	-	0	0.1	-	0.1	
				3.0	-	0	0.1	-	0.1	
				4.5	-	0	0.1	-	0.1	
			I _{OL} =8mA	2.3	-	0.1	0.3	-	0.3	
			I _{OL} =16mA	3.0	-	0.15	0.4	-	0.4	
			I _{OL} =24mA	3.0	-	0.22	0.55	-	0.55	
			I _{OL} =32mA	4.5	-	0.22	0.55	-	0.55	
Input Leakage Current	I _{IN}	V _{IN} =5.5V or GND		0 ～ 5.5	-	-	±1	-	±10	μA
Power Off Leakage Current	I _{OFF}	V _{IN} or V _{OUT} =5.5V		0.0	-	-	1	-	10	
Quiescent Supply Current	I _{CC}	V _{IN} =V _{CC} or GND		5.5	-	-	2	-	20	

KIC7SZ00FU

AC ELECTRICAL CHARACTERISTICS (Input $t_r=t_f=3\text{ns}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION		Ta=25℃			Ta=-40~85℃		UNIT
			V _{CC} (V)	MIN.	TYP.	MAX.	MIN.	MAX.	
Propagation Delay Time	t _{PLH} t _{PHL}	C _L =15pF, R _L =1MΩ	1.8	2.0	4.5	9.5	2.0	10.0	ns
			2.5±0.2	0.8	3.0	6.5	0.8	7.0	
			3.3±0.3	0.5	2.4	4.5	0.5	4.7	
			5.0±0.5	0.5	2.0	3.9	0.5	4.1	
		C _L =50pF, R _L =500Ω	3.3±0.3	1.5	2.9	5.0	1.5	5.2	
			5.0±0.5	0.8	2.4	4.3	0.8	4.5	
Input Capacitance	C _{IN}	—	0~5.5	—	4	—	—	—	pF
Power Dissipation Capacitance	C _{PD}	(Note1)	3.3	—	24	—	—	—	
			5.5	—	30	—	—	—	

Note 1 : C_{PD} defined as the value of internal equivalent capacitance of IC which is calculated from the operating current consumption without load (refer to Test Circuit.)

Average operating current can be obtained by the equation hereunder.

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