

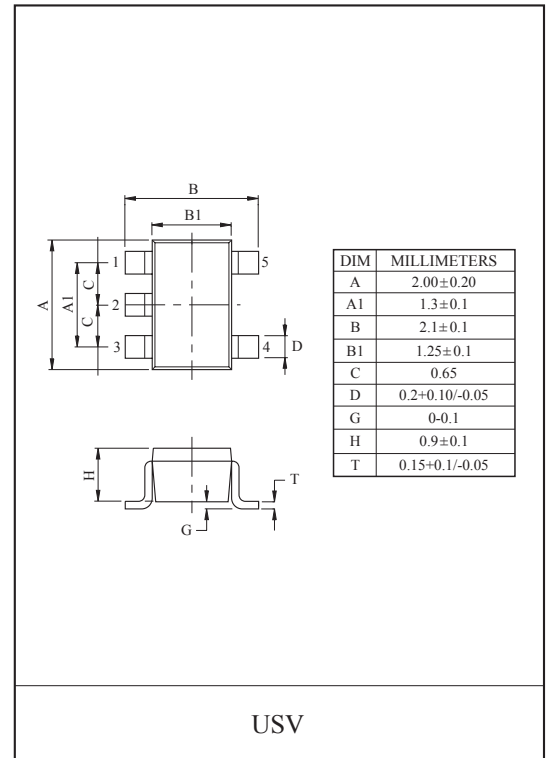
SCHMITT INVERTER

FEATURES

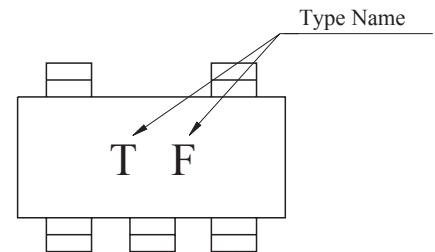
- High output drive : $\pm 24\text{mA}(\text{min.}) @ V_{CC}=3\text{V}$.
- High Speed : $t_{pd}=3.7\text{ns}(\text{typ.}) @ V_{CC}=5\text{V}, 50\text{pF}$.
- Wide Operating Voltage Range : $V_{CC(\text{opr})}=1.65\sim 5.5\text{V}$.
- High Latch-Up Immunity : Higher than or equal to $\pm 500\text{mA}$.
- High ESD : Higher than or equal to $\pm 200\text{V}(\text{JEITA})$
: Higher than or equal to $\pm 2000\text{V}(\text{MIL})$
- Power down protection is provided on all inputs and outputs.

MAXIMUM RATINGS (Ta=25°C)

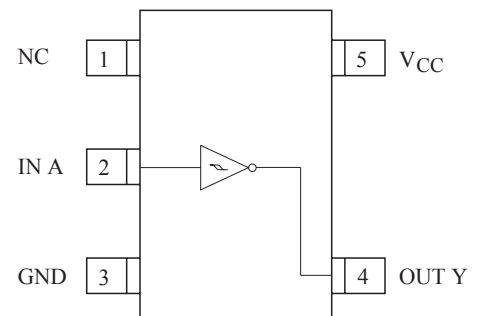
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage Range	V_{CC}	-0.5~6	V
DC Input Voltage	V_{IN}	-0.5~6	V
DC Output Voltage	V_{OUT}	-0.5~6	V
Input Diode Current	I_{IK}	-20	mA
Output Diode Current	I_{OK}	-20	mA
DC Output Current	I_{OUT}	± 50	mA
DC V_{CC} /ground Current	I_{CC}	± 50	mA
Power Dissipation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



MARKING

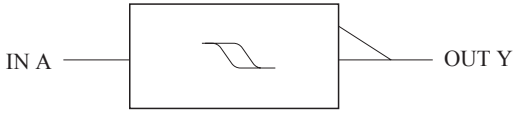


PIN CONNECTION(TOP VIEW)



KIC7SZ14FU

Logic Diagram



Recommended Operating Conditions

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	1.65~5.5	V
		1.5~5.5 (Note1)	
Input Voltage	V_{IN}	0~5.5	V
Output Voltage	V_{OUT}	0~5.5 (Note2)	V
		0~ V_{CC} (Note3)	
Operating Temperature	T_{opr}	-40~85	°C

Note1 : Data retention only.

Note2 : $V_{CC}=0V$.

Note3 : High or low state

ELECTRICAL CHARACTERISTICS

DC Characteristics

CHARACTERISTIC	SYMBOL	TEST CONDITION	$T_a=25^\circ\text{C}$			$T_a=-40\sim 85^\circ\text{C}$		UNIT	
			$V_{CC}(V)$	MIN.	TYP.	MAX.	MIN.		MAX.
Positive Threshold Voltage	V_P	-	1.65	0.6	1.0	1.4	0.65	1.4	V
			1.8	0.7	1.1	1.5	0.7	1.5	
			2.3	1.0	1.4	1.8	1.0	1.8	
			3.0	1.3	1.75	2.2	1.3	2.2	
			4.5	1.9	2.45	3.1	1.9	3.1	
			5.5	2.2	2.9	3.6	2.2	3.6	
Negative Threshold Voltage	V_N	-	1.65	0.2	0.5	0.8	0.2	0.8	V
			1.8	0.25	0.55	0.9	0.25	0.9	
			2.3	0.40	0.75	1.15	0.40	1.15	
			3.0	0.6	1.0	1.5	0.6	1.5	
			4.5	1.0	1.43	2.0	1.0	2.0	
			5.5	1.2	1.70	2.4	1.2	2.4	
Hysteresis Voltage	V_H	-	1.65	0.1	0.48	0.9	0.1	1.0	V
			1.8	0.15	0.54	1.0	0.15	1.0	
			2.3	0.25	0.65	1.1	0.25	1.1	
			3.0	0.4	0.77	1.2	0.4	1.2	
			4.5	0.6	1.01	1.5	0.6	1.5	
			5.5	0.7	1.18	1.7	0.7	1.7	

KIC7SZ14FU

CHARACTERISTIC	SYMBOL	TEST CONDITION		Ta=25°C			Ta=-40~85°C		UNIT	
				V _{CC} (V)	MIN.	TYP.	MAX.	MIN.		MAX.
High-Level Output Voltage	V _{OH}	V _{IN} =V _{IL}	I _{OH} =-100μA	1.65	1.55	1.65	-	1.55	-	V
				1.8	1.7	1.8	-	1.7	-	
				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} =-4mA	1.65	1.29	1.52	-	1.29	-	
			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	-	
	V _{OL}	V _{IN} =V _{IH}	I _{OL} =100μA	1.65	-	0	0.1	-	0.1	V
				1.8	-	0	0.1	-	0.1	
				2.3	-	0	0.1	-	0.1	
				3.0	-	0	0.1	-	0.1	
				4.5	-	0	0.1	-	0.1	
			I _{OL} =4mA	1.65	-	0.08	0.24	-	0.24	
			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	μA	
Quiescent Supply Current	I _{CC}	V _{IN} =5.5V or GND	1.65~5.5	-	-	1	-	10	μA	

AC Characteristics (unless otherwise specified, Input : t_r=t_f=3ns)

CHARACTERISTIC	SYMBOL	TEST CONDITION		Ta=25°C			Ta=-40~85°C		UNIT
				V _{CC} (V)	MIN.	TYP.	MAX.	MIN.	
Propagation delay time	t _{PLH} t _{PHL}	C _L =15pF, R _L =1MΩ	1.65	2.0	9.1	15.0	2.0	15.6	ns
			1.8	2.0	7.6	12.5	2.0	13	
			2.5±0.2	1.0	5.0	9.0	1.0	9.5	
			3.3±0.3	1.0	3.7	6.3	1.0	6.5	
			5.0±0.5	0.5	3.1	5.2	0.5	5.5	
			3.3±0.3	1.5	4.4	7.2	1.5	7.5	ns
5.0±0.5	0.5	3.7	5.9	0.8	6.2				
Input Capacitance	C _{IN}	-	-	-	-	-	-	pF	
Power Dissipation Capacitance	C _{PD}	(Note4)	-	-	-	-	-	pF	

Note : 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(oper)}=C_{PD} · V_{CC} · f_{IN}+I_{CC}