

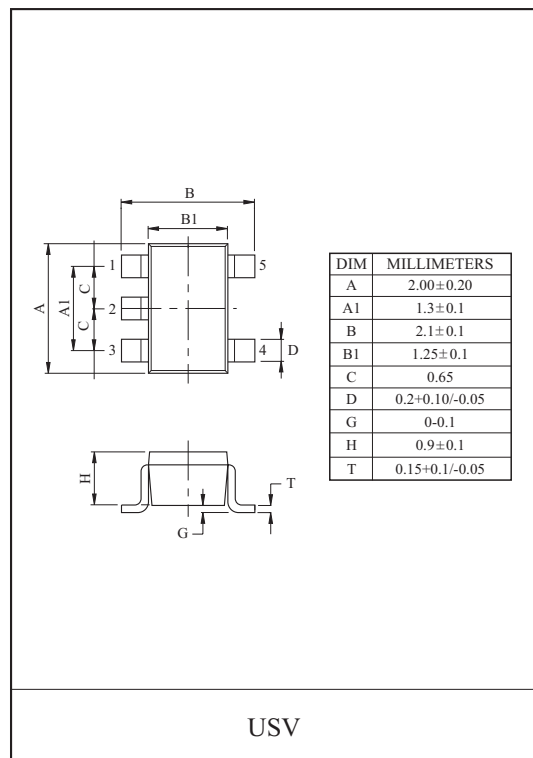
INVERTER

FEATURES

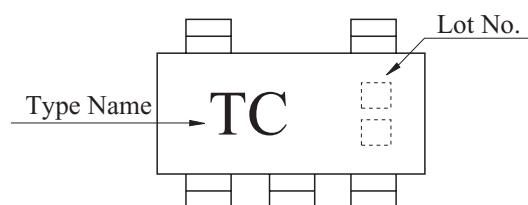
- High Output Drive : $\pm 24\text{mA}$ (Typ.) @ $V_{CC}=3\text{V}$
- Super High Speed Operation : $t_{PD}=2.4\text{ns}$ (Typ.) @ $V_{CC}=5\text{V}$, 50pF
- Operation Voltage Range : $V_{CC(\text{opr})}=1.8 \sim 5.5\text{V}$.
- Supply Voltage Data Retention : $V_{CC}=1.5 \sim 5.5\text{V}$.
- 5V Tolerant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

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

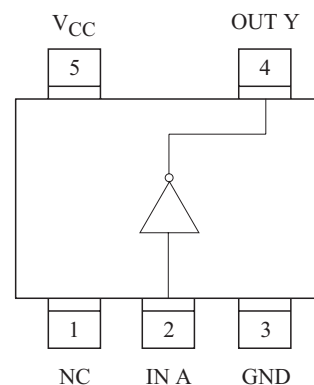
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage Range	V_{CC}	-0.5 ~ 6	V
DC Input Voltage	V_{IN}	-0.5 ~ 6	V
DC Output Voltage	V_{OUT}	-0.5 ~ 6	V
Input Diode Current	I_{IK}	± 20	mA
Output Diode Current	I_{OK}	± 20	mA
DC Output Current	I_{OUT}	± 50	mA
DC V_{CC} /Ground Current	I_{CC}	± 50	mA
Power Dissipation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



MARKING

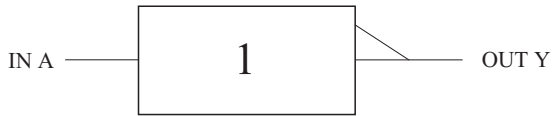


PIN CONNECTION (TOP VIEW)



KIC7SZ04FU

LOGIC DIAGRAM



DC ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION		V _{CC} (V)	Ta=25			Ta=-40 85		UNIT
					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} =-100 μA	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} =100 μA	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
Quiescent Supply Current	I _{CC}	V _{IN} =V _{CC} or GND		5.5	-	-	2	-	20	

KIC7SZ04FU

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}	$C_L=15\text{pF}$, $R_L=1\text{M}\Omega$	1.8	2.0	4.4	9.5	2.0	10.0	ns
			2.5 ± 0.2	0.8	2.9	6.5	0.8	7.0	
			3.3 ± 0.3	0.5	2.1	4.5	0.5	4.7	
			5.0 ± 0.5	0.5	1.8	3.9	0.5	4.1	
		$C_L=50\text{pF}$, $R_L=500\Omega$	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	-	20	-	-	-	
			3.5	-	26	-	-	-	

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.

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