

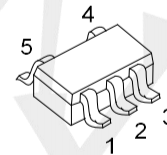
■ DESCRIPTION

The NC7S14P5X-TP contains one inverter with Schmitt-trigger, which provides the Function $Y = \overline{A}$.

They provide an inverting buffer function with Schmitt trigger action. These devices are capable of transforming slowly changing input signals into sharply defined, jitter-free output signals.

■ FEATURES

- * Operation Voltage Range: 2V ~ 5.5V
- * Low power consumption, $I_{CC} = 1\mu A$ (Max.) at 5.5V
- * $\pm 8mA$ output driver at 5V

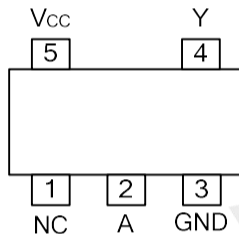


SOT-353

■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
NC7S14P5X-TP	NC7S14P5X-TP	SOT-353	Tape Reel

■ PIN CONFIGURATION

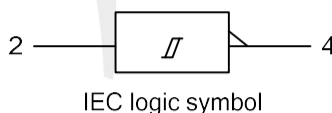
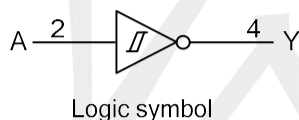


■ FUNCTION TABLE

INPUT(A)	OUTPUT(Y)
L	H
H	L

Note: H: high voltage level; L: low voltage level

■ LOGIC DIAGRAM



■ **ABSOLUTE MAXIMUM RATING** ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.5 ~ 7	V
Input Voltage	V_{IN}	-0.5 ~ 7	V
Output Voltage	V_{OUT}	-0.5 ~ $V_{CC}+0.5$	V
V_{CC} or GND Current	I_{CC}	± 50	mA
Output Current	I_{OUT}	± 25	mA
Input Clamp Current	I_{IK}	-20	mA
Output Clamp Current	I_{OK}	± 20	mA
Storage Temperature	T_{STG}	-65 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ **RECOMMENDED OPERATING CONDITIONS**

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}		2		5.5	V
Input Voltage	V_{IN}		0		5.5	V
Output Voltage	V_{OUT}	High or low state	0		V_{CC}	V
Operating Temperature	T_A		-40		+125	$^\circ\text{C}$

■ **ELECTRICAL CHARACTERISTICS** (Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	$T_A=25^\circ\text{C}$			$T_A=-40^\circ\text{C} \sim +125^\circ\text{C}$			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
Positive-Going Threshold	V_{T+}	$V_{CC}=3.0\text{V}$	1.2		2.2	1.2		2.2	V
		$V_{CC}=4.5\text{V}$	1.75		3.15	1.75		3.15	V
		$V_{CC}=5.5\text{V}$	2.15		3.85	2.15		3.85	V
Negative-Going Threshold	V_{T-}	$V_{CC}=3.0\text{V}$	0.90		1.90	0.9		1.9	V
		$V_{CC}=4.5\text{V}$	1.35		2.75	1.35		2.75	V
		$V_{CC}=5.5\text{V}$	1.65		3.35	1.65		3.35	V
Hysteresis Voltage ($V_{T+}-V_{T-}$)	ΔV_T	$V_{CC}=3.0\text{V}$	0.3		1.2	0.3		1.2	V
		$V_{CC}=4.5\text{V}$	0.4		1.4	0.4		1.4	V
		$V_{CC}=5.5\text{V}$	0.5		1.6	0.4		1.6	V
High-Level Output Voltage	V_{OH}	$V_{CC}=2.0\text{V}$	1.9	2		1.9			V
		$V_{CC}=3.0\text{V}$	2.9	3		2.9			V
		$V_{CC}=4.5\text{V}$	4.4	4.5		4.4			V
		$V_{CC}=3.0\text{V}, I_{OH}=-4\text{mA}$	2.58			2.4			V
		$V_{CC}=4.5\text{V}, I_{OH}=-8\text{mA}$	3.94			3.7			V
Low-Level Output Voltage	V_{OL}	$V_{CC}=2.0\text{V}$			0.1			0.1	V
		$V_{CC}=3.0\text{V}$			0.1			0.1	V
		$V_{CC}=4.5\text{V}$			0.1			0.1	V
		$V_{CC}=3.0\text{V}, I_{OL}=4\text{mA}$			0.36			0.6	V
		$V_{CC}=4.5\text{V}, I_{OL}=8\text{mA}$			0.36			0.6	V
Input Leakage Current	$I_{I(LEAK)}$	$V_{CC}=0 \sim 5.5\text{V}, V_{IN}=5.5\text{V}$ or GND			± 0.1			± 2	μA
Quiescent Supply Current	I_Q	$V_{CC}=5.5\text{V}, V_{IN}=V_{CC}$ or GND, $I_{OUT}=0\text{A}$			1			40	μA

■ **DYNAMIC CHARACTERISTICS** (Unless otherwise specified)

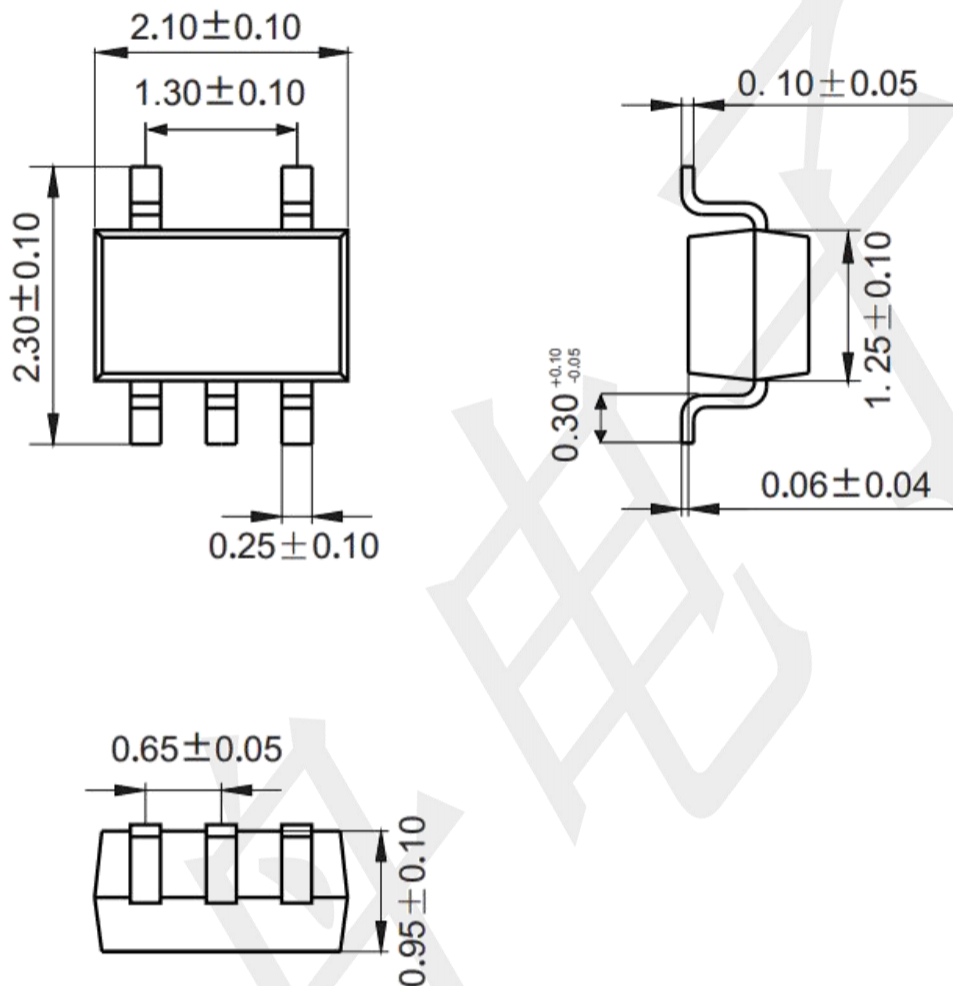
PARAMETER	SYMBOL	TEST CONDITIONS	T _A =25°C			T _A =-40°C~+125°C			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
Propagation Delay Time Input (A) to Output (Y)	t _{PLH}	V _{CC} =3.3V±0.3V		10.8	16.3	1		21	ns
		V _{CC} =5V±0.5V		10.8	16.3	1		14	ns
	t _{PHL}	V _{CC} =3.3V±0.3V		7	10.6	1		21	ns
		V _{CC} =5V±0.5V		7	10.6	1		14	ns
	t _{PLH}	V _{CC} =3.3V±0.3V		10.8	16.3	1		21	ns
		V _{CC} =5V±0.5V		10.8	16.3	1		14	ns
	t _{PHL}	V _{CC} =3.3V±0.3V		7	10.6	1		21	ns
		V _{CC} =5V±0.5V		7	10.6	1		14	ns

■ **OPERATING CHARACTERISTICS** (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Capacitance	C _I	V _{CC} =5.0V, V _{IN} =V _{CC} or GND		2	10	pF
Power Dissipation Capacitance	C _{PD}	V _{CC} =5V, f=1MHz, No load		9		pF

Package information (Unit: mm)

SOT353



Mounting Pad Layout (Unit: mm)

