

## LOW-VOLTAGE OPERATION TINY SINGLE C-MOS COMPARATOR

### ■ GENERAL DESCRIPTION

The NJU7141 is a low voltage single-power-supply operation single C-MOS comparator with open drain output.

The NJU7141 operated from 1 to 5V supply and interface with most of TTL and C-MOS type standard logic ICs.

The NJU7141 is in MTP-5 package, and it is suitable for battery use items and other portable system.

### ■ PACKAGE OUTLINE



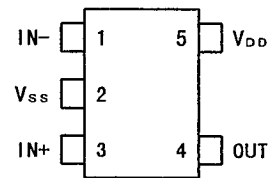
NJU7142F

### ■ FEATURES

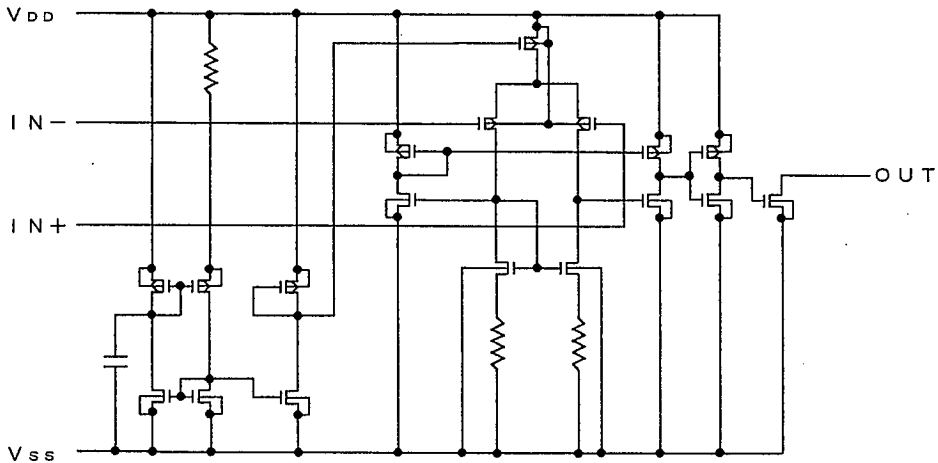
- Single-Power-Supply  $V_{DD}=1\sim 5: 5V$
- Input Offset Voltage  $V_{I0}=10mV \text{ max.}@3.0V$
- Low Operating Current  $I_{DD}=50\mu A \text{ typ.}$
- Low Input Bias Current  $I_{IE}=1pA \text{ typ.}$
- Open Drain Output
- Output Signal Falling Time  $10ns \text{ typ.}$
- C-MOS Technology
- Package Outline MTP-5

### ■ PIN CONFIGURATION

(Top View)



### ■ EQUIVALENT CIRCUIT



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## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sub>IN</sub>	7	V
Differential Input Voltage	V <sub>ID</sub>	±7 (Note1)	V
Common Mode Input Voltage	V <sub>IC</sub>	- 0.3 ~ 7	mA
Power Dissipation	P <sub>D</sub>	200	mW
Operating Temperature	Topr	- 40 ~ + 85	°C
Storage Temperature	Tstg	- 55 ~ +125	°C

Note1) If the supply voltage (V<sub>DD</sub>) is less than 7V, the input voltage must not over the V<sub>DD</sub> level though 7V is limit specified.

Note2) Decoupling capacitor should be connected between V<sub>DD</sub> and V<sub>SS</sub> due to the stabilized operation for the circuit.

## ■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V<sub>DD</sub>=3.0V, R<sub>L</sub>=∞)

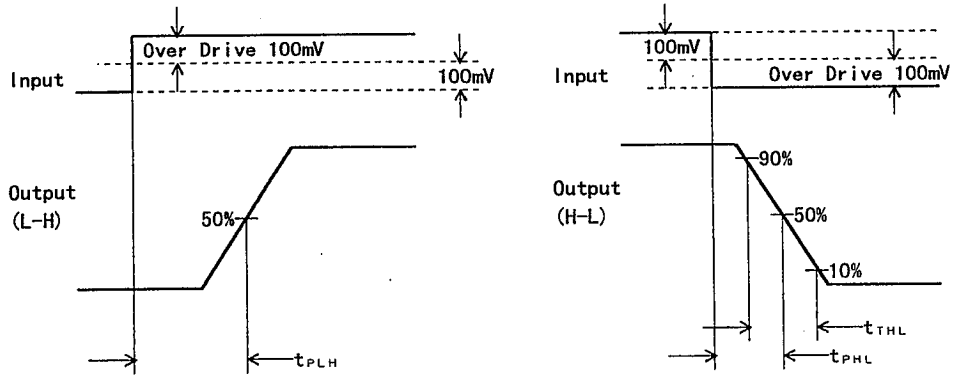
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V <sub>DD</sub>		1.0	—	5.5	V
Input Offset Voltage	V <sub>IO</sub>	V <sub>IN</sub> =1/2V <sub>DD</sub>	—	—	10	mV
Input Offset Current	I <sub>IO</sub>		—	1	—	pA
Input Bias Current	I <sub>IB</sub>		—	1	—	pA
Input Common Mode Voltage Range	V <sub>ICM</sub>		0~2.5	—	—	V
Output Leakage Current	I <sub>OFF</sub>	V <sub>OH</sub> =V <sub>DD</sub>	—	—	1	uA
Low Level Output Voltage	V <sub>OL</sub>	I <sub>OL</sub> =-2mA	0.3	—	—	V
Common Mode Rejection Ratio	CMR	V <sub>IC</sub> =1/2V <sub>DD</sub>	55	—	—	dB
Supply Voltage Rejection Ratio	SVR	V <sub>DD</sub> =3~5V	60	—	—	dB
Operating Current	I <sub>DD</sub>	No Load, V <sub>O</sub> =0V	—	50	80	uA

## ■ SWITCHING CHARACTERISTICS

(Ta=25°C, V<sub>DD</sub>=3.0V, f=10kHz, C<sub>L</sub>=15pF)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay High to Low	t <sub>PHL</sub>	Over Drive=100mV	—	0.25	—	us
		TTL Level Step	—	0.05	—	
Propagation Delay Low to High	t <sub>PLH</sub>	Over Drive=100mV	—	0.50	—	us
		TTL Level Step	—	0.15	—	
Output Signal Falling Time	t <sub>THL</sub>	Over Drive=100mV	—	10	—	ns

■ TIMING WAVEFORM



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## MEMO

[CAUTION]

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