

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 5.5V 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.

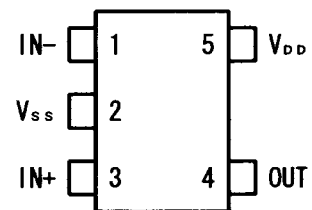
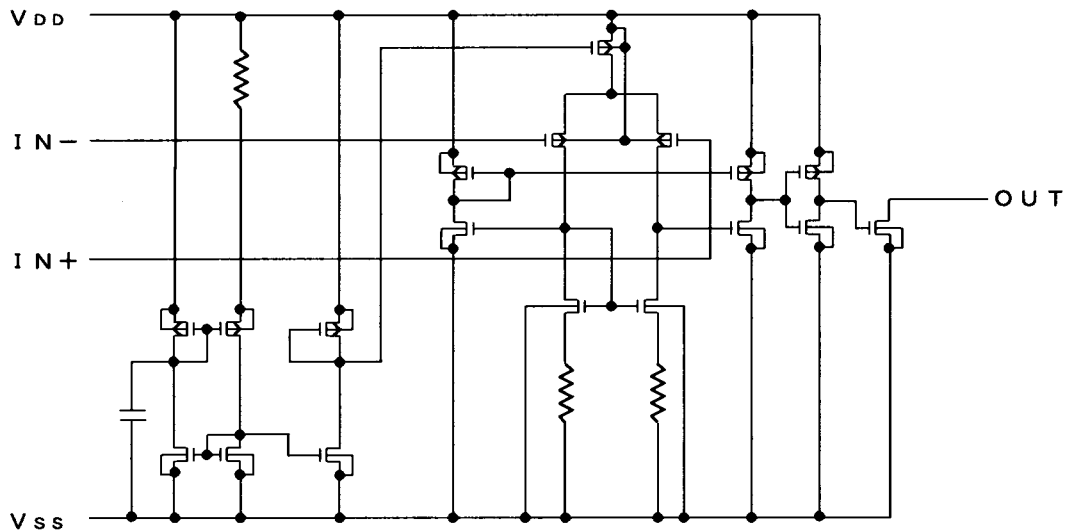
■ PACKAGE OUTLINE

NJU7141F
■ FEATURES

- Single-Power-Supply $V_{DD}=1\sim 5.5V$
- Input Offset Voltage $V_{I.O}=10mV$ max. @3.0V
- Low Operating Current $I_{DD}=5\mu A$ typ.
- Low Input Bias Current $I_{I.B}=1pA$ typ.
- Open Drain Output
- Output Signal Falling Time 30ns typ.
- C-MOS Technology
- Package Outline MTP-5

■ PIN CONFIGURATION

(Top View)


■ EQUIVALENT CIRCUIT


■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{IN}	7	V
Differential Input Voltage	V _{ID}	±7 (Note1)	V
Common Mode Input Voltage	V _{IC}	- 0.3 ~ 7	V
Power Dissipation	P _D	200	mW
Operating Temperature	T _{opr}	- 40 ~ + 85	°C
Storage Temperature	T _{stg}	- 55 ~ +125	°C

Note1) If the supply voltage (V_{DD}) is less than 7V, the input voltage must not over the V_{DD} level though 7V is limit specified.

Note2) Decoupling capacitor should be connected between V_{DD} and V_{SS} due to the stabilized operation for the circuit.

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V_{DD}=3.0V, R_L=∞)

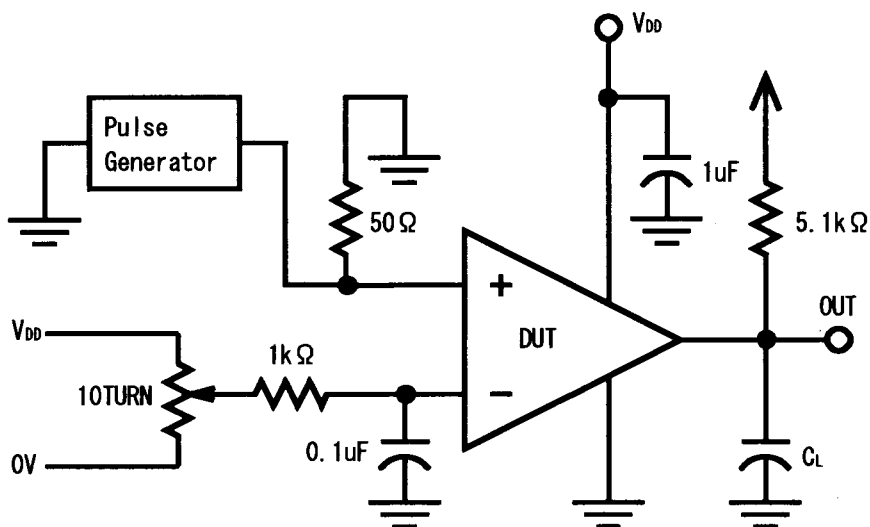
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V _{DD}		1.0	—	5.5	V
Input Offset Voltage	V _{IO}	V _{IN} =1/2V _{DD}	—	—	10	mV
Input Offset Current	I _{IO}		—	1	—	μA
Input Bias Current	I _{IB}		—	1	—	μA
Input Common Mode Voltage Range	V _{ICM}		0~2.5	—	—	V
Output Leakage Current	I _{OFF}	V _{OH} =V _{DD}	—	—	1	μA
Low Level Output Voltage	V _{OL}	I _{OL} =-2mA	0.3	—	—	V
Common Mode Rejection Ratio	CMR	V _{IC} =1/2V _{DD}	55	—	—	dB
Supply Voltage Rejection Ratio	SVR	V _{DD} =3~5V	60	—	—	dB
Operating Current	I _{DD}	No Load, V _O =0V	—	5	12	μA

■ SWITCHING CHARACTERISTICS

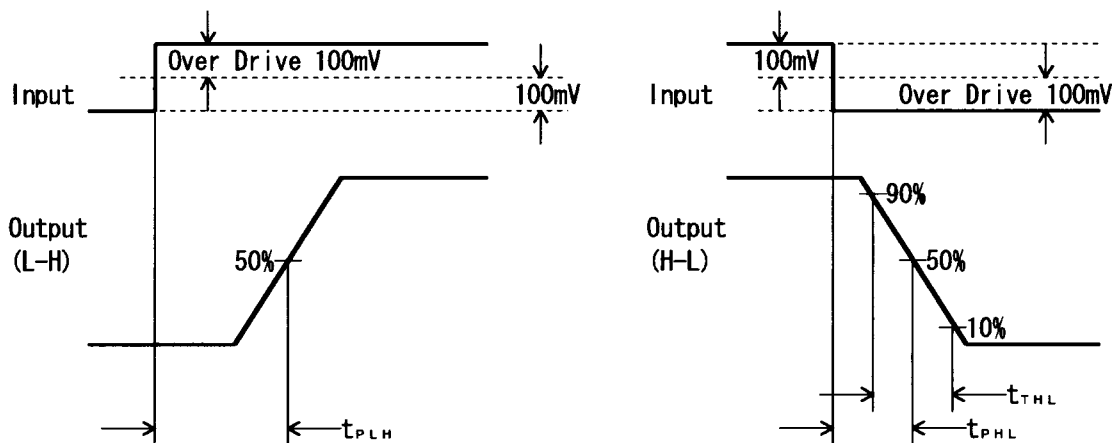
(Ta=25°C, V_{DD}=3.0V, f=10kHz, C_L=15pF)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay High to Low	t _{PHL}	Over Drive=100mV	—	0.35	—	us
		TTL Level Step	—	0.10	—	
Propagation Delay Low to High	t _{PLH}	Over Drive=100mV	—	0.90	—	us
		TTL Level Step	—	0.60	—	
Output Signal Falling Time	t _{THL}	Over Drive=100mV	—	30	—	ns

■ SWITCHING CHARACTERISTICS MEASUREMENT CIRCUIT



■ TIMING WAVEFORM



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