

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



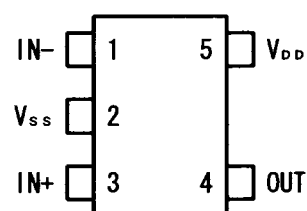
NJU7141F

■ FEATURES

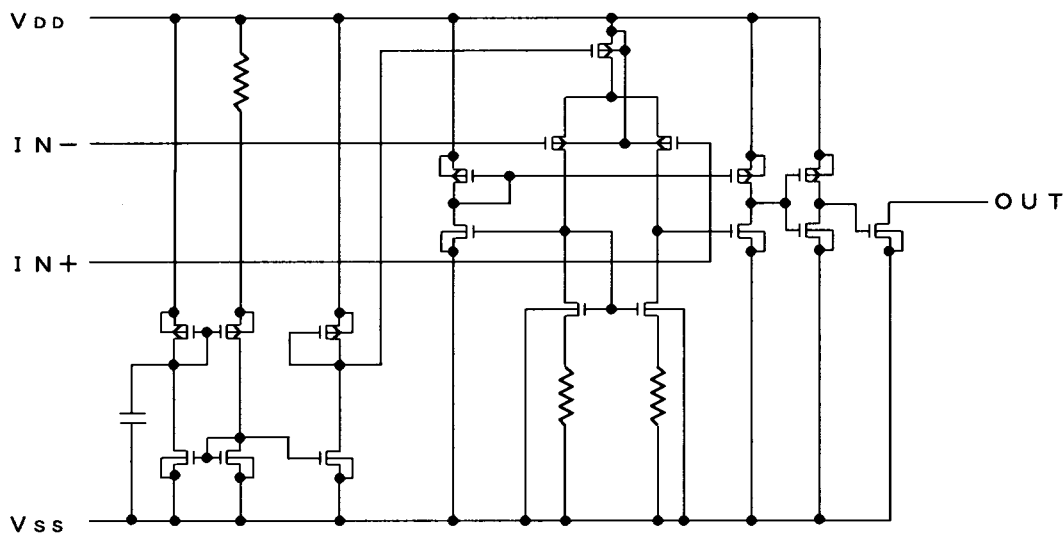
- Single-Power-Supply $V_{DD}=1\sim 5.5V$
- Input Offset Voltage $V_{IO}=10mV$ max. @3.0V
- Low Operating Current $I_{DD}=5\mu A$ typ.
- Low Input Bias Current $I_{IB}=1pA$ typ.
- Open Drain Output
- Output Signal Falling Time 30ns typ.
- C-MOS Technology
- Package Outline MTP-5

■ 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, $V_{DD}=3.0V$, $R_L=\infty$)

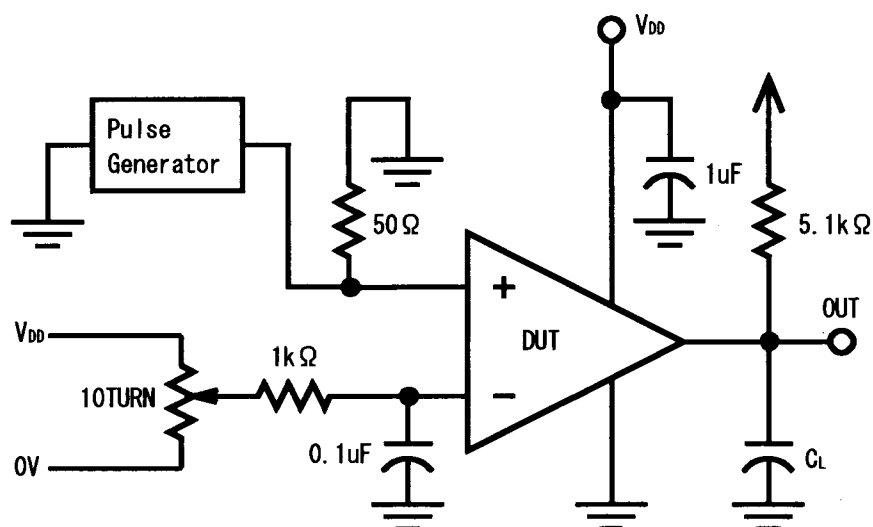
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V_{DD}		1.0	—	5.5	V
Input Offset Voltage	V_{IO}	$V_{IN}=1/2V_{DD}$	—	—	10	mV
Input Offset Current	I_{IO}		—	1	—	pA
Input Bias Current	I_{IB}		—	1	—	pA
Input Common Mode Voltage Range	V_{ICM}		0~2.5	—	—	V
Output Leakage Current	I_{OFF}	$V_{OH}=V_{DD}$	—	—	1	uA
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	$V_{DD}=3\sim 5V$	60	—	—	dB
Operating Current	I_{DD}	No Load, $V_o=0V$	—	5	12	uA

■ SWITCHING CHARACTERISTICS

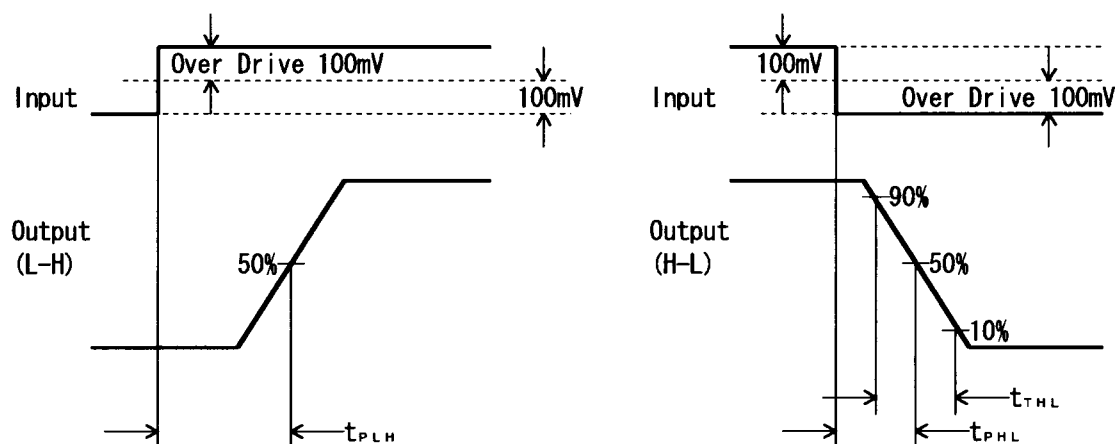
(Ta=25°C, $V_{DD}=3.0V$, $f=10kHz$, $C_L=15pF$)

PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNIT
Propagation Delay High to Low	t_{PHL}	Over Drive=100mV	$V_{IC}=0V$	—	0.35	—	us
		TTL Level Step		—	0.10	—	
Propagation Delay Low to High	t_{PLH}	Over Drive=100mV	$V_{IC}=0V$	—	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



[CAUTION]

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