

LOW-VOLTAGE OPERATION TINY SINGLE CMOS COMPARATOR

■ GENERAL DESCRIPTION

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

The NJU7141 operated from 1 to 5.5V supply and interface with most of TTL and CMOS type standard logic ICs.

The NJU7141 is in SOT-23-5 package, and it is suitable for battery use items and other portable system.

■ PACKAGE OUTLINE

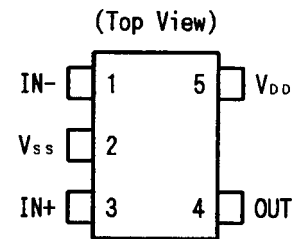


NJU7141F

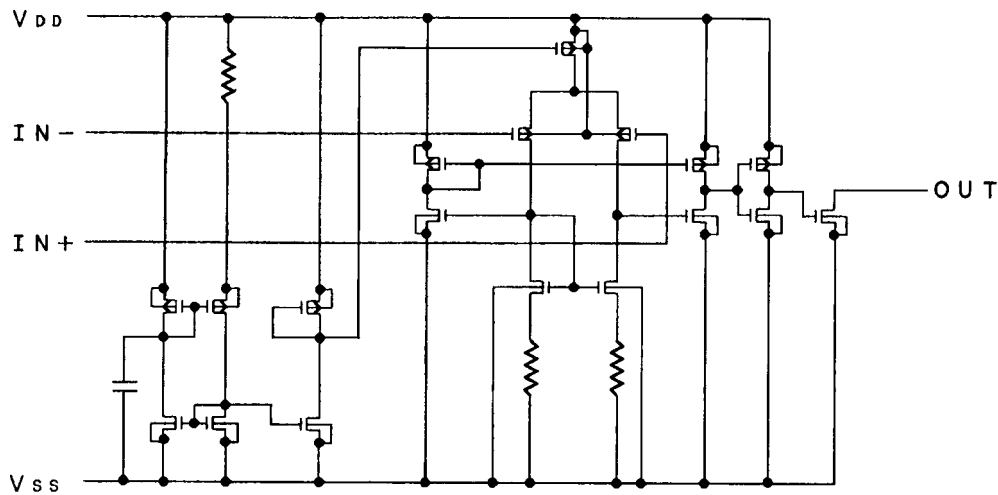
■ FEATURES

- Single-Power-Supply ($V_{DD}=1$ to $5.5V$)
- 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 SOT-23-5

■ PIN CONFIGURATION



■ EQUIVALENT CIRCUIT



NJU7141

■ 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 Range	T _{opr}	-40~+85	°C
Storage Temperature Range	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=∞)

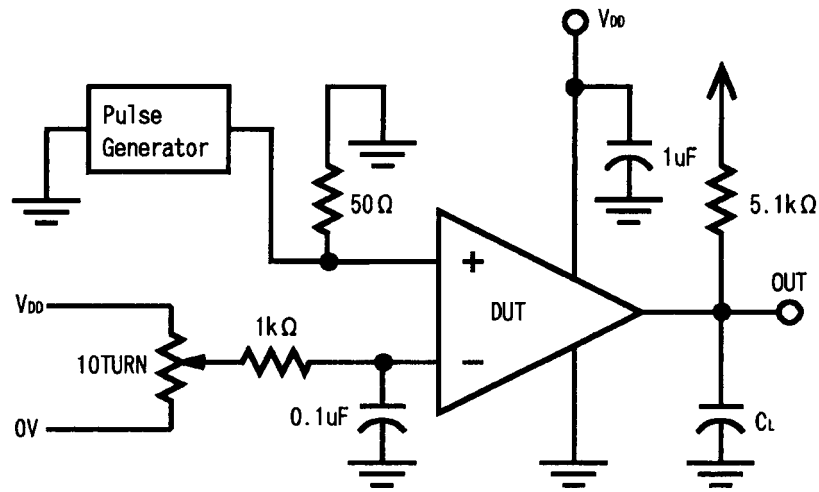
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V _{DD}		1.0	-	5.5	V
Input Offset Voltage	V _{IO}	V _{IN} =1/2V _{DD}	-	-	10	mV
Input Offset Current	I _{IO}		-	1	-	pA
Input Bias Current	I _{IB}		-	1	-	pA
Input Common Mode Voltage Range	V _{ICM}		0~2.5	-	-	V
Output Leakage Current	I _{OFF}	V _{OH} =V _{DD}	-	-	1	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

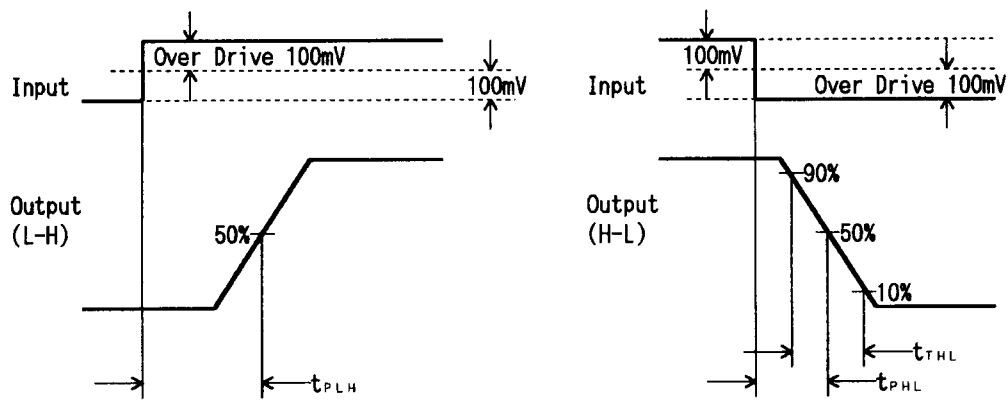
(Ta=25°C, V_{DD}=3.0V, f=10kHz, C_L=15pF)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Propagation Delay High to Low	t _{PHL}	Over Drive=100mV	V _{IC} =0V	-	0.35	-	μs
		TTL Level Step		-	0.10	-	
Propagation Delay Low to High	t _{PLH}	Over Drive=100mV	V _{IC} =0V	-	0.90	-	μs
		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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