

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

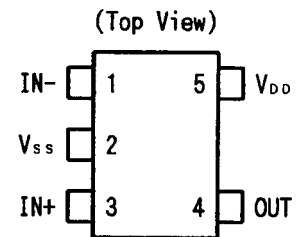


NJU7141F

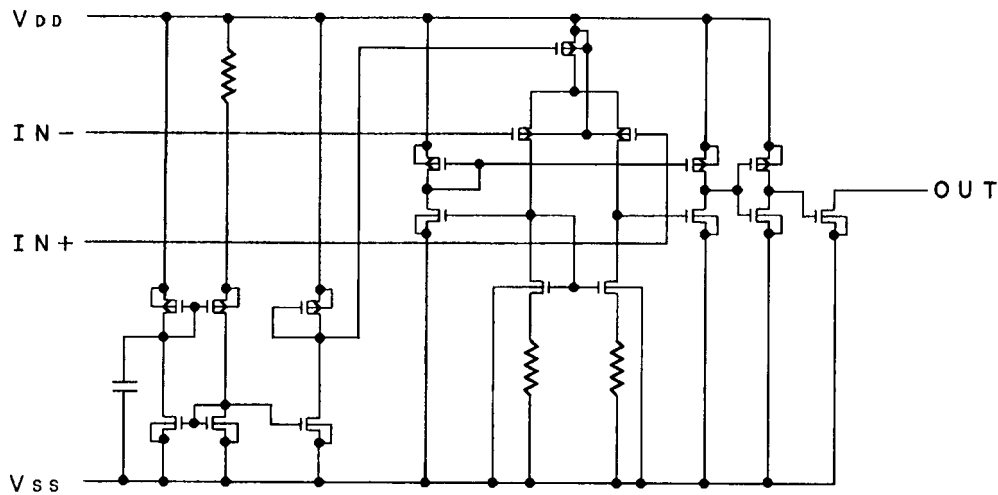
■ FEATURES

- 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 ($I_B=1pA$ typ.)
- Open Drain Output
- Output Signal Falling Time (30ns typ.)
- C-MOS Technology
- Package Outline MTP5

■ 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 =∞)

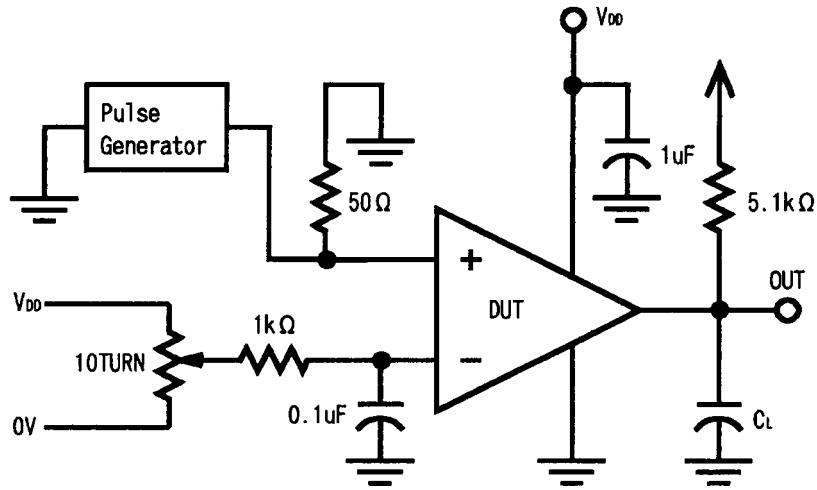
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V_{DD}		1.0	-	5.5	V
Input Offset Voltage	V_{IO}	$V_{IN}=1/2V_{DD}$	-	-	10	mV
Input Offset Current	I_{IO}		-	1	-	pA
Input Bias Current	I_{IB}		-	1	-	pA
Input Common Mode Voltage Range	V_{ICM}		0~2.5	-	-	V
Output Leakage Current	I_{OFF}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

■ SWITCHING CHARACTERISTICS

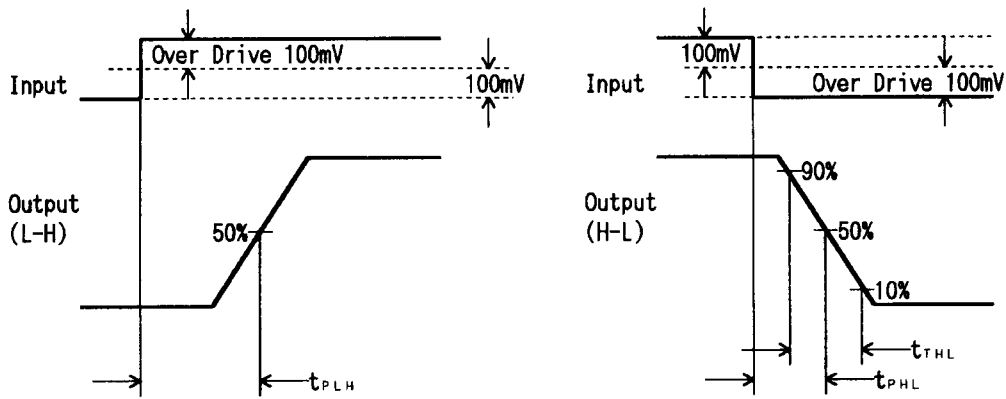
(Ta=25°C, V_{DD} =3.0V, f=10kHz, C_L =15pF)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Propagation Delay High to Low	t_{PHL}	Over Drive=100mV	-	0.35	-	μs
		TTL Level Step				
Propagation Delay Low to High	t_{PLH}	Over Drive=100mV	-	0.90	-	μs
		TTL Level Step				
Output Signal Falling Time	t_{THL}	Over Drive=100mV	-	30	-	ns

■ SWITCHING CHARACTERISTICS MEASUREMENT CIRCUIT



■ TIMING WAVEFORM



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