

## LOW POWER AND LOW OFFSET VOLTAGE SUPER SMALL-SIZED SINGLE C-MOS COMPALATOR

### ■GENERAL DESCRIPTION

The **NJU7118** is a super small-sized package single C-MOS comparators with open drain output.

The operating voltage is from 1V to 5.5V, and the interface can be connected with most of TTL and C-MOS type standard logic ICs.

Furthermore, The input offset voltage is lower than 4mV and the package is super small-sized SC88A, therefore they can be suitable for battery use items and other portable items.

### ■PACKAGE INFORMATION



NJU7118F2

### ■FEATURES

- Single Low Power Supply
- Low Offset Voltage
- Low Operating Current
- Open Drain Output
- Package Outline
- C-MOS Technology

$V_{DD}=1.0\sim 5.5V$

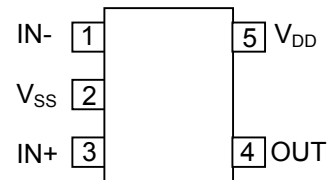
$V_{IO}=4mV$  max

$I_{DD}=10\mu A$  typ

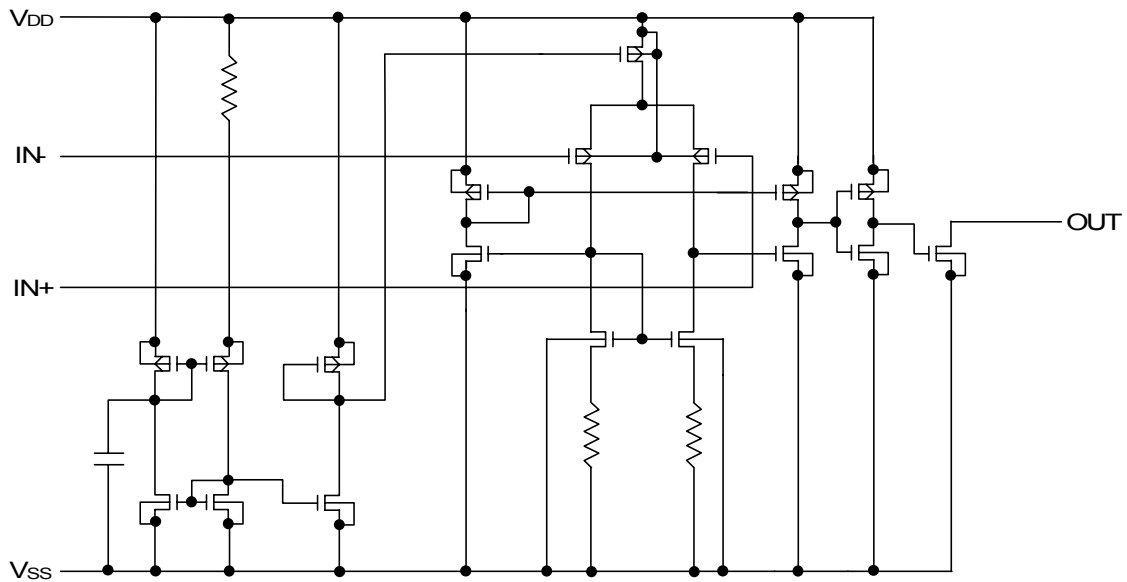
SC88A

### ■PIN CONFIGURATION

(Top View)



### ■EQUIVALENT CIRCUIT



**■ABSOLUTE MAXIMUM RATINGS**

(Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>DD</sub>	7.0	V
Differential Input Voltage	V <sub>ID</sub>	±7.0 (Note1)	V
Common Mode Input Voltage	V <sub>IC</sub>	-0.3~7.0	V
Power Dissipation	P <sub>D</sub>	250 (Note2)	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 7.0V, the input voltage must not over the V<sub>DD</sub> level though 7.0V is limit specified.

Note2) The power dissipation is value mounted on a glass epoxy board (FR-4) in size of 50x50x1.6 millimeters square.

Note3) 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**

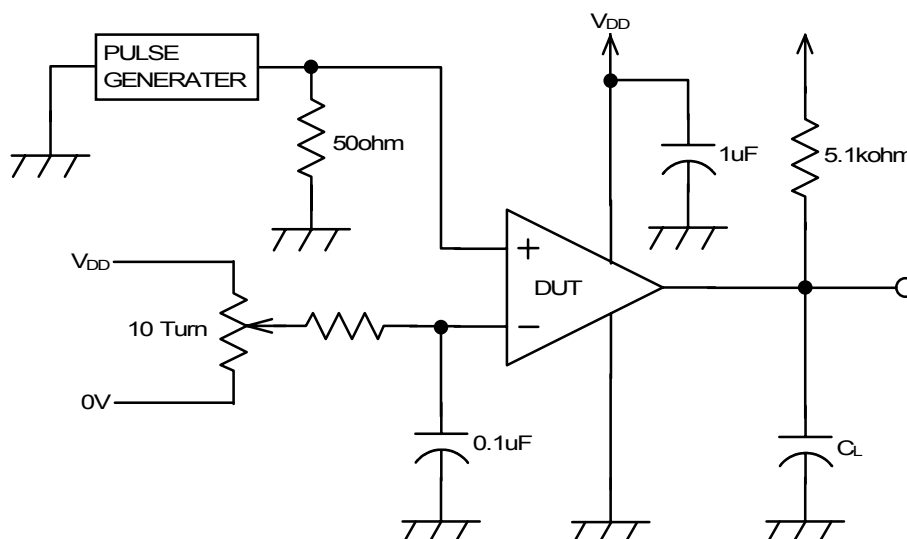
 (V<sub>DD</sub>=3.0V, R<sub>L</sub>=∞, Ta=25°C)

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> =V <sub>DD</sub> /2	-	-	4	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
Low Level Output Voltage	V <sub>OL</sub>	I <sub>OL</sub> =+5mA	-	-	0.3	V
Operating Current	I <sub>DD</sub>		-	10	20	uA

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

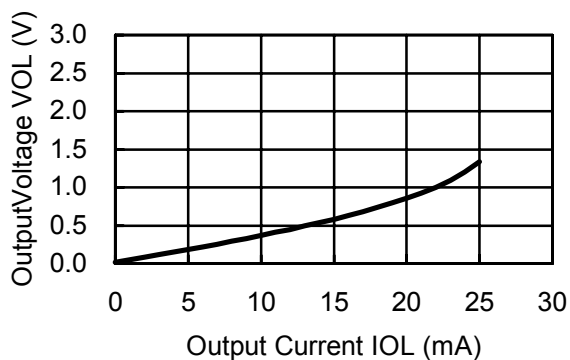
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay Low to High	t <sub>PLH</sub>	Over Drive=100mV	-	540	-	ns
Propagation Delay High to Low	t <sub>PHL</sub>	Over Drive=100mV	-	190	-	ns
Output Signal Falling Time	t <sub>THL</sub>	Over Drive=100mV	-	4	-	ns

■SWITCHING CHARACTERISTICS MEASUREMENT CIRCUIT



■TYPICAL CHARACTERISTICS

Output Voltage vs. Output Current (Sink)



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