Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

LOW POWER AND LOW OFFSET VOLTAGE SUPER SMALL-SIZED SINGLE C-MOS OPERATIONAL AMPLIFIER

■GENERAL DESCRIPTION

The **NJU7007/08** are super small-sized package single C-MOS operational amplifiers operated on a single-power-supply, low power, low offset voltage and low operating current.

The input offset voltage is lower than 4mV, and the input bias current is as low as than 1pA, consequently very small signal around the ground level can be amplified.

The minimum operating voltage is 1V and the output stage permits output signal to swing between both of the supply rails.

Furthermore, The **NJU7007/08** are packaged with super small-sized SC88A, therefore it can be especially applied to portable items.

■PACKAGE INFORMATION

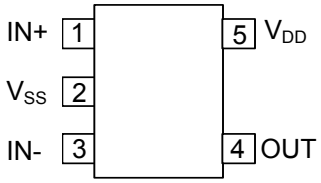
NJU7007F3
/NJU7008F3

■FEATURES

- ●Low Offset Voltage V_{IO}=4mV max
- ●Single Low Power Supply V_{DD}=1.0~5.5V
- ●Wide Output Swing Range V_{OM}=2.9V min @ V_{DD}=3.0V
- ●Low Operating Current (See Line-up)
- ●Low Bias Current I_{IB}=1pA typ
- ●Compensation Capacitor Incorporated
- ●Package Outline SC88A
- ●C-MOS Technology

■PIN CONFIGURATION

(Top View)

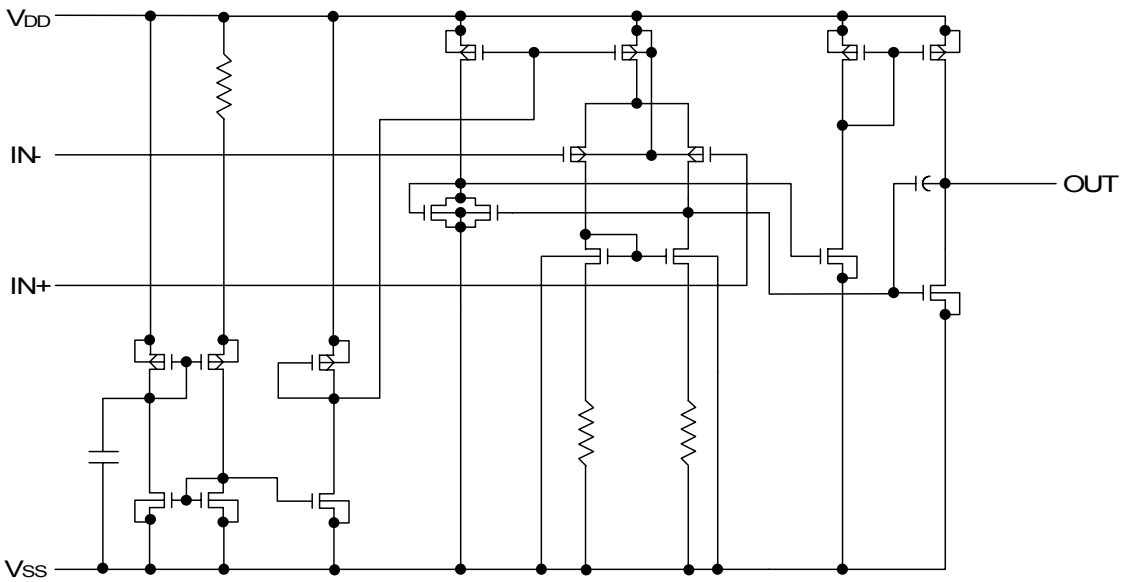


■LINE-UP

(V_{DD}=3.0V,Ta=25°C)

PARAMETER	NJU7007	NJU7008	UNIT
Operating Current	15	200	uA(typ)
Slew Rate	0.1	2.4	V/us(typ)
Unity Gain Bandwidth	0.2	1.0	MHz(typ)

■EQUIVALENT CIRCUIT



■ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V_{DD}	7.0	V
Differential Input Voltage	V_{ID}	±7.0 (Note1)	V
Common Mode Input Voltage	V_{IC}	-0.3~7.0	V
Power Dissipation	P_D	250 (Note2)	mW
Operating Temperature	Topr	-40~+85	°C
Storage Temperature	Tstg	-55~+125	°C

Note1) If the supply voltage (V_{DD}) is less than 7.0V, the input voltage must not over the V_{DD} level though 7.0V is limit specified.

Note2) The power dissipation is value mounted on a glass epoxy board in size of 50x50x1.6 millimater.

Note3) Decoupling capacitor should be connected between V_{DD} and V_{SS} due to the stabilized operation for the circuit.

■ELECTRICAL CHARACTERISTICS

NJU7007

(V_{DD}=3.0V,R_L=∞,Ta=25°C)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V_{IO}	V_{IN}=V_{DD}/2	-	-	4	mV
Input Offset Current	I_{IO}		-	1	-	pA
Input Bias Current	I_{IB}		-	1	-	pA
Input Impedance	R_{IN}		-	1	-	TΩ
Large Signal Voltage Gain	A_{VD}		60	70	-	dB
Input Common Mode Voltage Range	V_{ICM}		0~2.5	-	-	V
Maximum Output Swing Voltage	V_{OM1}	R_L=1MΩ	V_{DD}-0.1	-	-	V
	V_{OM2}	R_L=1MΩ	-	-	V_{SS}+0.1	V
Output Source Current	I_{OH}	V_O=V_{DD}/2	7	12		uA
Common Mode Rejection Ratio	CMR	V_{IN}=V_{DD}/2	55	65	-	dB
Supply Voltage Rejection Ratio	SVR	V_{DD}=1.5~5.5V	60	70	-	dB
Operating Current	I_{DD}		-	15	25	uA
Slew Rate	SR		-	0.1	-	V/us
Unity Gain Bandwidth	Ft	A_V=40dB,C_L=10pF	-	0.2	-	MHz

NJU7008

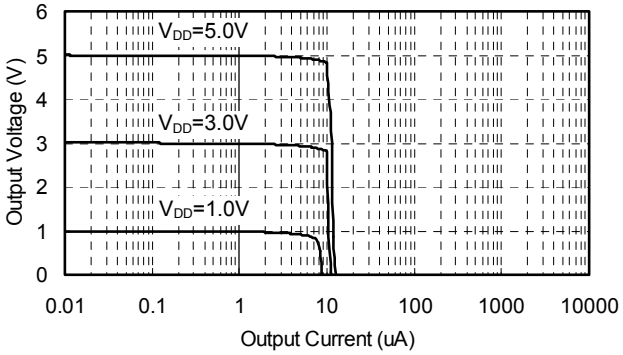
(V_{DD}=3.0V,R_L=∞,Ta=25°C)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V_{IO}	V_{IN}=V_{DD}/2	-	-	4	mA
Input Offset Current	I_{IO}		-	1	-	pA
Input Bias Current	I_{IB}		-	1	-	pA
Input Impedance	R_{IN}		-	1	-	TΩ
Large Signal Voltage Gain	A_{VD}		60	70	-	dB
Input Common Mode Voltage Range	V_{ICM}		0~2.5	-	-	V
Maximum Output Swing Voltage	V_{OM1}	R_L=50kΩ	V_{DD}-0.1	-	-	V
	V_{OM2}	R_L=50kΩ	-	-	V_{SS}+0.1	V
Output Source Current	I_{OH}	V_O=V_{DD}/2	100	200	-	uA
Common Mode Rejection Ratio	CMR	V_{IN}=V_{DD}/2	55	65	-	dB
Supply Voltage Rejection Ratio	SVR	V_{DD}=1.5~5.5V	60	70	-	dB
Operating Current	I_{DD}		-	200	400	uA
Slew Rate	SR		-	2.4	-	V/us
Unity Gain Bandwidth	Ft	A_V=40dB,C_L=10pF	-	1.0	-	MHz

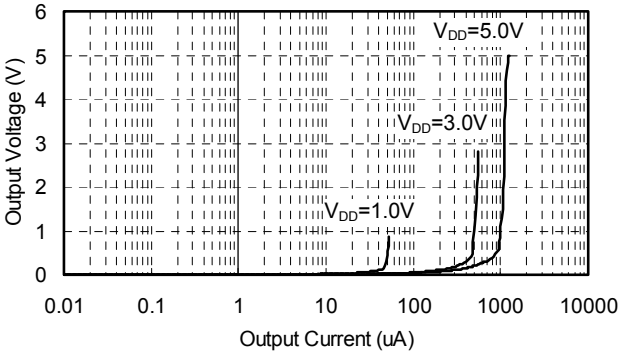
■TYPICAL CHARACTERISTICS

(1)NJU7007

Output Voltage vs. Output Current (SOURCE)

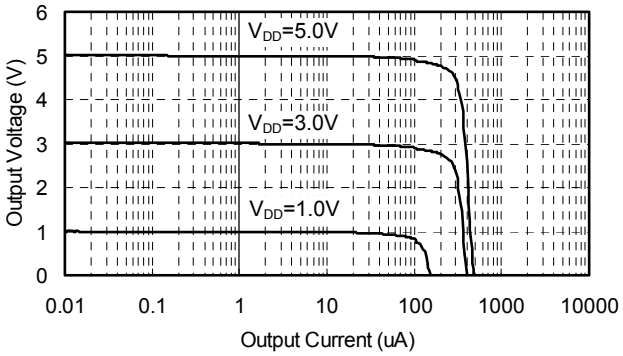


Output Voltage vs. Output Current (SINK)



(2)NJU7008

Output Voltage vs.OutputCurrent (SOURCE)



Output Voltage vs. Output Current (SINK)