LOW INPUT OFFSET VOLTAGE C-MOS OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJU7071, 72 and 74 are single, dual and quad C-MOS Operational Amplifiers operated on a single-power-supply and low operating current.

The input offset voltage is lower than 2mV, and the input bias current is as low as less than 1pA, consequently the very small single around the ground level can be amplified.

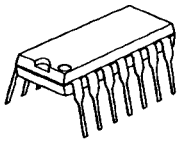
The minimum operating voltage is 5V and the output stage permits output signal to swing between both of the supply rails.

Furthermore, the operating current is also as low as 0.6mA(typ.) per circuit, therefore it can be applied especially to battery operated items.

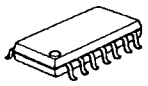
■PACKAGE OUTLINE

NJU7071D
NJU7072D

NJU7071M
NJU7072M



NJU7074D



NJU7074M

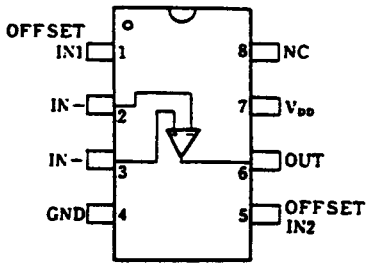
NJU7071V

NJU7074V

■ FEATURES

● Single-Power-Supply	
● Low Input Offset Voltage	V_{IO}=2mV max
● Wide Operating Voltage	V_{DD}=5～16V
● Wide Output Swing Range	V_{OM}≧9.98V typ. at V_{DD}=10V
● Low Operating Current	0.6mA/circuit typ.
● Low Bias Current	I_{IB}=1pA typ.
● Internal Compensation Capacitor	
● External Offset Null Adjustment	Only NJU7071
● Package Outline	DIP/DMP/SSOP 8(NJU7071) DIP/DMP 8(NJU7072) DIP/DMP/SSOP 14(NJU7074)
● C-MOS Technology	

■ PIN CONFIGURATION



NJU7071D
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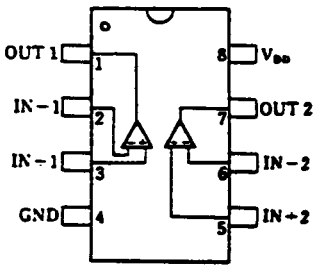

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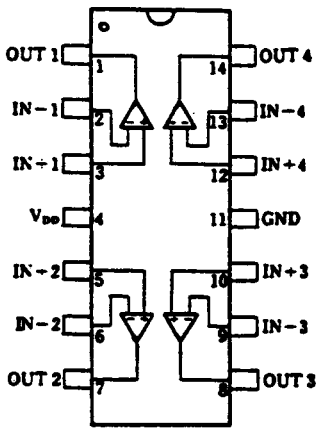
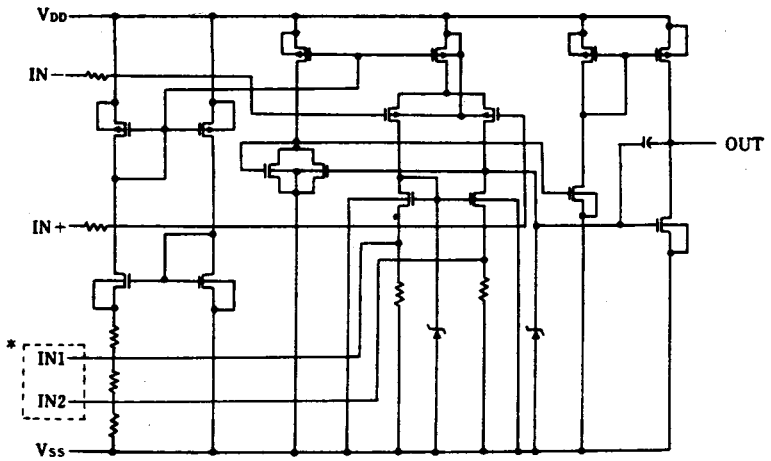


NJU7074D
NJU7074M
NJU7074V

■ EQUIVALENT CIRCUIT



*IN1, IN2 are only for NJU7071 (NJU7072/74 don't have these terminals.)

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	18	V
Differential Input Voltage	V_{ID}	±18 *1	V
Common Mode Input Voltage	V_{IC}	- 0.3 ~ 18	V
Power Dissipation	P_D	(SSOP-8) 250 (SSOP-14) 300 (DIP-8) 500 (DMP-8) 300 (DIP-14) 700 (DMP-14) 300	mW
Operating Temperature	Topr	- 20 ~ + 75	°C
Storage Temperature	Tstg	- 40 ~ +125	°C

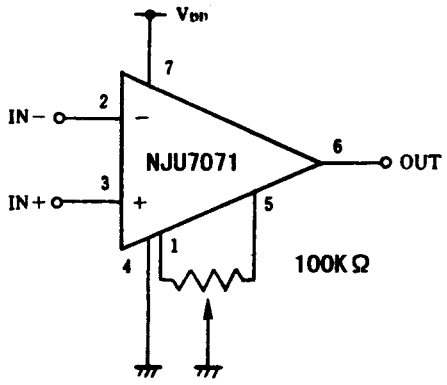
*1) If the supply voltage (V_{DD}) is less than 18V, the input voltage must not over the V_{DD} level though 18V is limit specified.

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V_{DD}=10V, R_L=∞)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input offset voltage	V_{IO}	R_S=50Ω	—	—	2	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_V		80	95	—	dB
Input Common Mode Voltage Range	V_{ICM}		0~9	—	—	V
Maximum Output Swing Voltage	V_{OM}	R_L=1MΩ	9.80	9.98	—	V
Common Mode Rejection Ratio	CMR		60	75	—	dB
Supply Voltage Rejection Ratio	SVR		60	75	—	dB
Operating Current / circuit	I_{DD}		—	0.6	1.2	mA
Slew Rate	SR		—	1.1	—	V/us
Unity Gain Bandwidth	Ft	A_V=40dB, C_L=10pF	—	1.0	—	MHz

■ OFFSET ADJUSTMENT CIRCUIT (ONLY FOR NJU7071)



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