

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 signal 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.

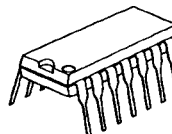
■ PACKAGE OUTLINE



NJU7071D
NJU7072D

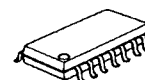


NJU7071M
NJU7072M



NJU7074D

NJU7071V



NJU7074M

NJU7074V

■ FEATURES

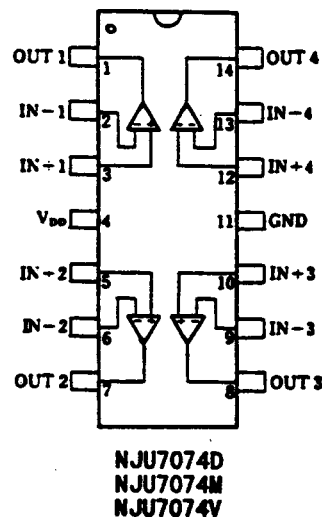
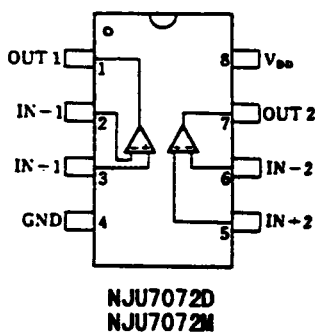
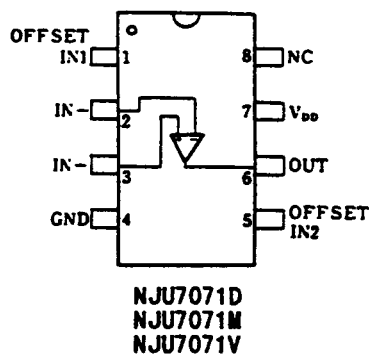
- Single-Power-Supply
- Low Input Offset Voltage
- Wide Operating Voltage
- Wide Output Swing Range
- Low Operating Current
- Low Bias Current
- Internal Compensation Capacitor
- External Offset Null Adjustment
- Package Outline

V_{io} = 2mV max
 V_{DD} = 5~16V
 $V_{om} \geq 9.98V$ typ. at V_{DD} = 10V
 0.6mA/circuit typ.
 I_{IB} = 1pA typ.

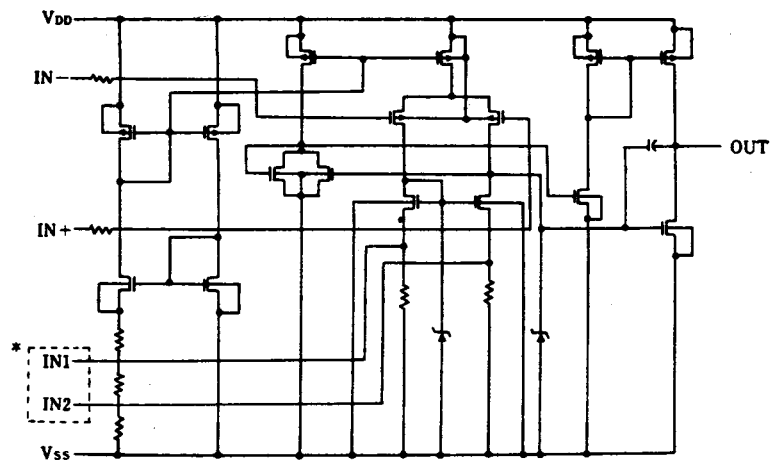
Only NJU7071
 DIP/DMP/SSOP 8 (NJU7071)
 DIP/DMP 8 (NJU7072)
 DIP/DMP/SSOP 14 (NJU7074)

- C-MOS Technology

■ PIN CONFIGURATION



■ 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	T_{opr}	- 20 ~ + 75	°C
Storage Temperature	T_{stg}	- 40 ~ +125	°C

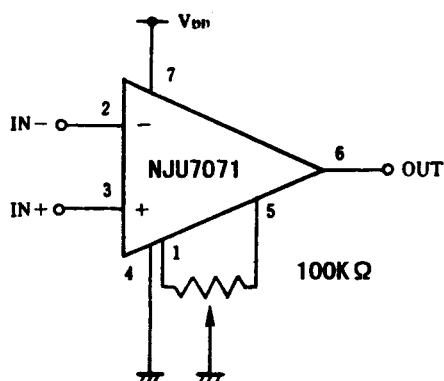
*1) If the supply voltage (V_{DD}) is less than 18V, the input voltage must not over the V_{DD} level though 18V is limit specified.

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, $V_{DD}=10V$, $R_L=\infty$)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input offset voltage	V_{IO}	$R_s=50\Omega$	—	—	2	mV
Input offset current	I_{IO}		—	1	—	pA
Input Bias current	I_{IB}		—	1	—	pA
Input Impedance	R_{IN}		—	1	—	$T\Omega$
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}	$R_L=1M\Omega$	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/ μ s
Unity Gain Bandwidth	F_t	$A_v=40dB$, $C_L=10pF$	—	1.0	—	MHz

■ OFFSET ADJUSTMENT CIRCUIT (ONLY FOR NJU7071)



[CAUTION]

The specifications on this data book are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this data book are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.