

LOW VOLTAGE C-MOS OP AMP

■ GENERAL DESCRIPTION

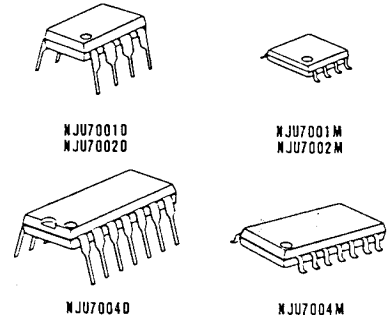
The NJU7001, 02 and 04 are single, dual and quad C-MOS Operational Amplifiers operated on a single-power-supply, low voltage and low current consumption.

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

The input bias current is as low as less than 1pA, consequently the very small signal around the ground level can be amplified.

Furthermore, the current consumption is also as low as 15uA(typ) per circuit, therefore it can be applied especially to battery operated items.

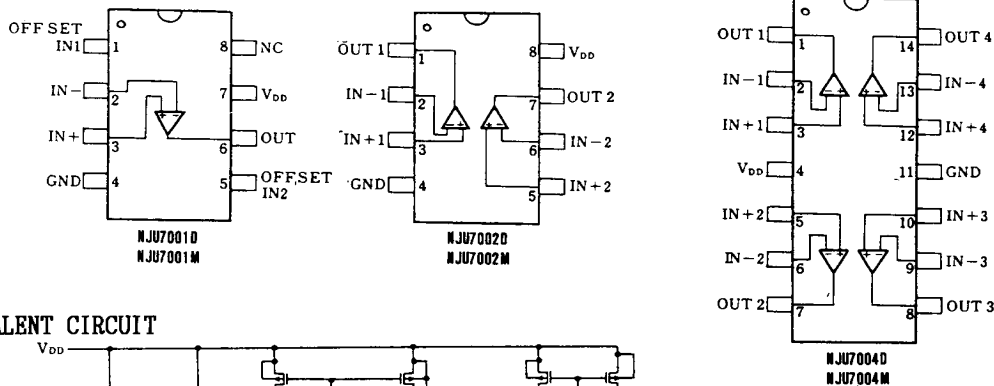
■ PACKAGE OUTLINE



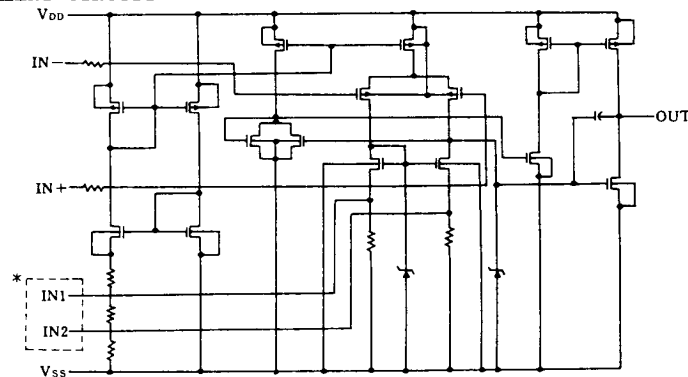
■ FEATURES

- Single-Power-Supply
- Wide Operating Voltage Range ($V_{DD}=1\sim 16V$)
- Wide Output Swing Range ($V_{OM}=2.94V$ typ. at $V_{DD}=3V$)
- Low Current Consumption (15uA / circuit)
- Low Bias Current ($I_{IB}=1pA$)
- Internal Compensation Capacitor
- External Offset Null Adjustment(Only NJU7001)
- Package Outline
DIP/DMP 8 (NJU7001/7002)
DIP/DMP14 (NJU7004)
- C-MOS Technology

■ PIN CONFIGURATION



■ EQUIVALENT CIRCUIT



* IN1, IN2 are only for NJU7001(NJU7002/04 don't have these terminals).

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■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

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

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V_{DD}=3V, R_L=∞)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V _{IO}	R _S =50Ω			10	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 ₀		80	90		dB
Input Common Mode Voltage Range	V _{ICM}		0~2			V
Maximum Swing Voltage	V _{OH}	R _L =1MΩ	2.90	2.94		V
Common Mode Rejection Ratio	CMR		60	70		dB
Supply Voltage Rejection Ratio	SVR		60	70		dB
Supply Current / Circuit	I _{DD}			15	25	μA/Cir
Slew Rate	SR			0.05		V/us
Unity Gain Bandwidth	F _t	A ₀ =40dB C _L =10pF		0.1		MHz

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