

LOW-VOLTAGE OPERATION DUAL C-MOS OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJU7019 is a single supply dual C-MOS operational amplifier featuring a low operating voltage from 1V and low operating current of 20 μ A (typ.)/circuit. It also has a low input bias current of 1pA (typ.) and input voltage range from ground, which can provide a ground sensing, and rail-to-rail output swing in both rails. The NJU7019 is available in a small surface-mount package of MSOP8 (VSP8). The combination of these specifications makes it ideal for a variety of portable devices.

■ PACKAGE OUTLINE

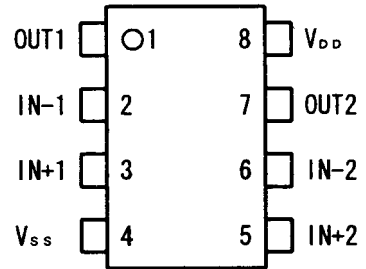


NJU7019R
(MSOP8(VSP8))

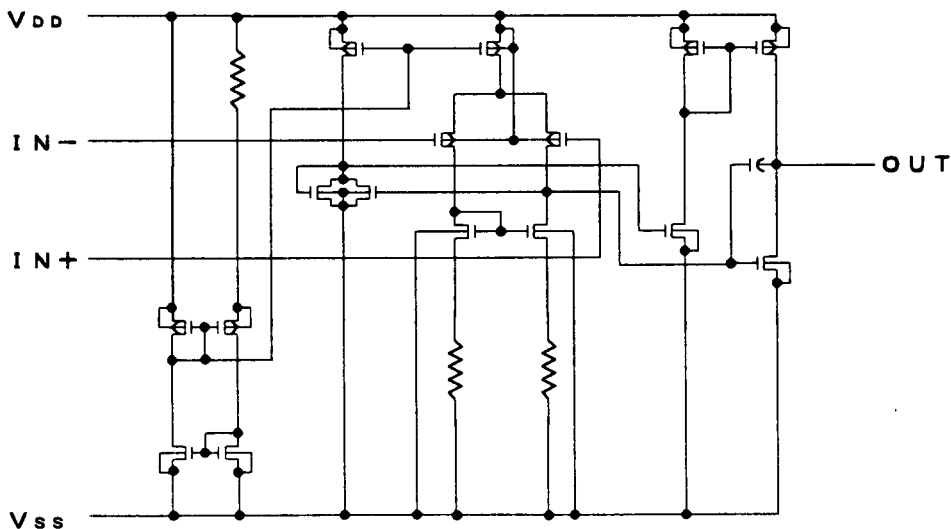
■ FEATURES

- Single-Power-Supply
- Wide Operating Voltage $V_{DD}=1\sim 5.5V$
- Wide Output Swing Range $V_{OM}=2.9V$ min. (@ $V_{DD}=3.0V$)
- Low Operating Current $I_{DD}=20\mu A$ typ./circuit
- Low Bias Current $I_B=1pA$ typ.
- Compensation Capacitor Incorporated
- C-MOS Technology
- Package Outline MSOP8(VSP8) MEET JEDEC MO-187-DA

■ PIN CONFIGURATION



■ EQUIVALENT CIRCUIT



NJU7019

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{IN}	7	V
Differential Input Voltage	V _{ID}	± 7 (note1)	V
Common Mode Input Voltage	V _{IC}	-0.3~7	V
Power Dissipation	P _D	(MSOP8(VSP8))320	mW
Operating Temperature Range	T _{opr}	-40~+85	°C
Storage Temperature Range	T _{stg}	-55~+125	°C

(note1) If the supply voltage (V_{DD}) is less than 7V, the input voltage must not over the V_{DD} level though 7V is limit specified.

(note2) Decoupling capacitor should be connected between V_{DD} and V_{SS} due to the stabilized operation for the circuit.

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V_{DD}=3.0V, R_L=∞)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}	V _{IN} =1/2V _{DD}	-	-	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 _{VD}		60	70	-	dB
Input Common Mode Voltage Range	V _{ICM}		0~2.5	-	-	V
Maximum Output Swing Voltage	V _{OM1}	R _L =500kΩ	V _{DD} -0.1	-	-	V
	V _{OM2}	R _L =500kΩ	-	-	V _{SS} +0.1	V
Common Mode Rejection Ratio	CMR	V _{IN} =1/2V _{DD}	55	65	-	dB
Supply Voltage Rejection Ratio	SVR	V _{DD} =1.5~5.5V	60	70	-	dB
Operating Current	I _{DD}	Per Circuit	-	20	40	μA
Output Current	I _{OUT}	Source	10	18	-	μA
Slew Rate	SR		-	0.25	-	V/μs
Unity Gain Bandwidth	F _t	A _v =40dB, C _L =10pF	-	0.4	-	MHz

[CAUTION]

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