

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

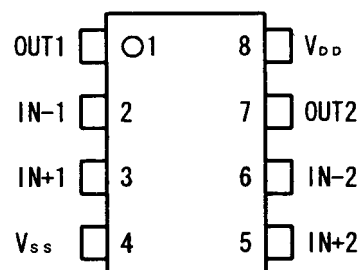


NJU7019R
(MSOP8(VSP8))

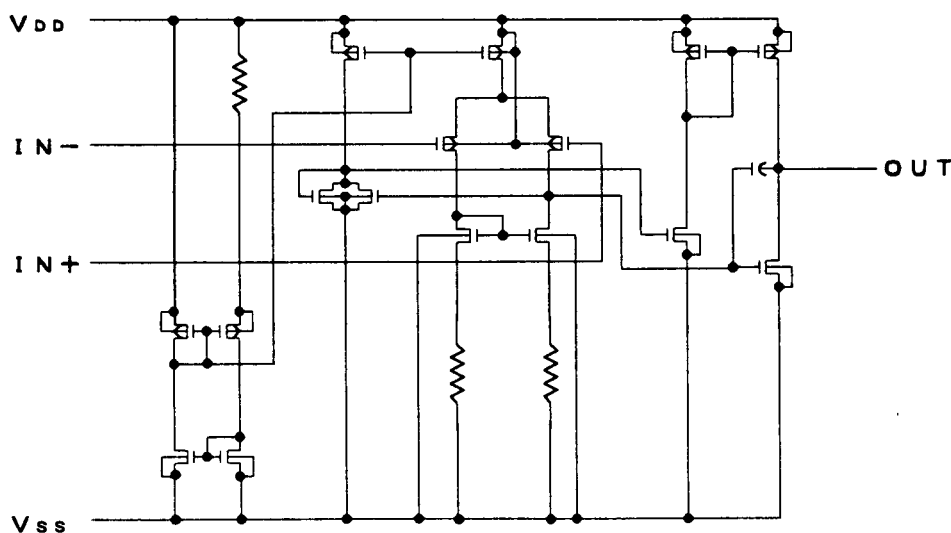
■ FEATURES

- 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



■ 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, $V_{DD}=3.0V$, $R_L=\infty$)

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}	$R_L=500k\Omega$	$V_{DD}-0.1$	-	-	V
	V_{OM2}	$R_L=500k\Omega$	-	-	$V_{SS}+0.1$	V
Common Mode Rejection Ratio	CMR	$V_{IN}=1/2V_{DD}$	55	65	-	dB
Supply Voltage Rejection Ratio	SVR	$V_{DD}=1.5\sim 5.5V$	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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