

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

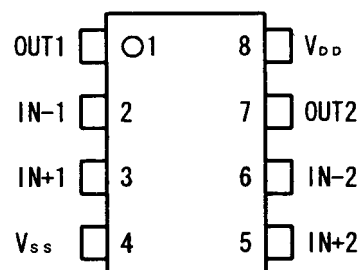


NJU7019R
(MSOP8(VSP8))

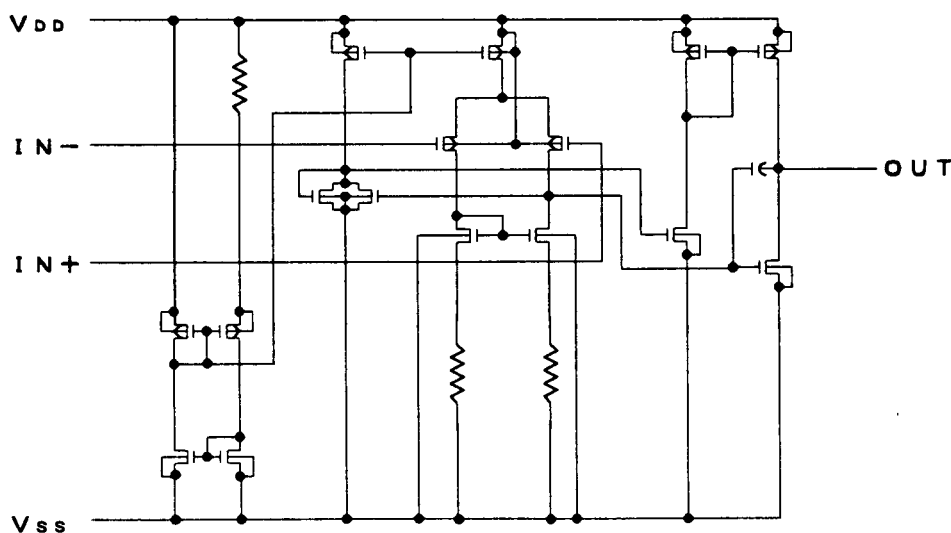
■ FEATURES

- 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]

The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook 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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[NJR:](#)

[NJU7019R-TE1](#)