SUPER LOW OPERATING CURRENT AND LOW OFFSET VOLTAGE TINY SINGLE C-MOS OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJU7006 is a super low operating current and low offset voltage tiny single C-MOS operational amplifier.

The input offset voltage is lower than 2mV (max) and the input bias current is as low as less than 1pA (typ),consequently the very small signal around the ground level can be amplified.

The operating current is 3μA (typ),and the output stage permits output signals to swing between both of the supply rails.

Furthermore, the NJU7006 is packaged with very small MTP-5,therefore it can be especially applied to battery operated portable items.

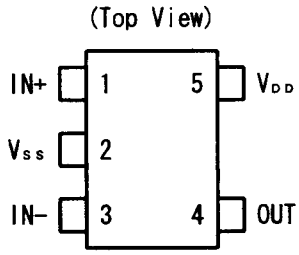
■ PACKAGE OUTLINE

NJU7006F

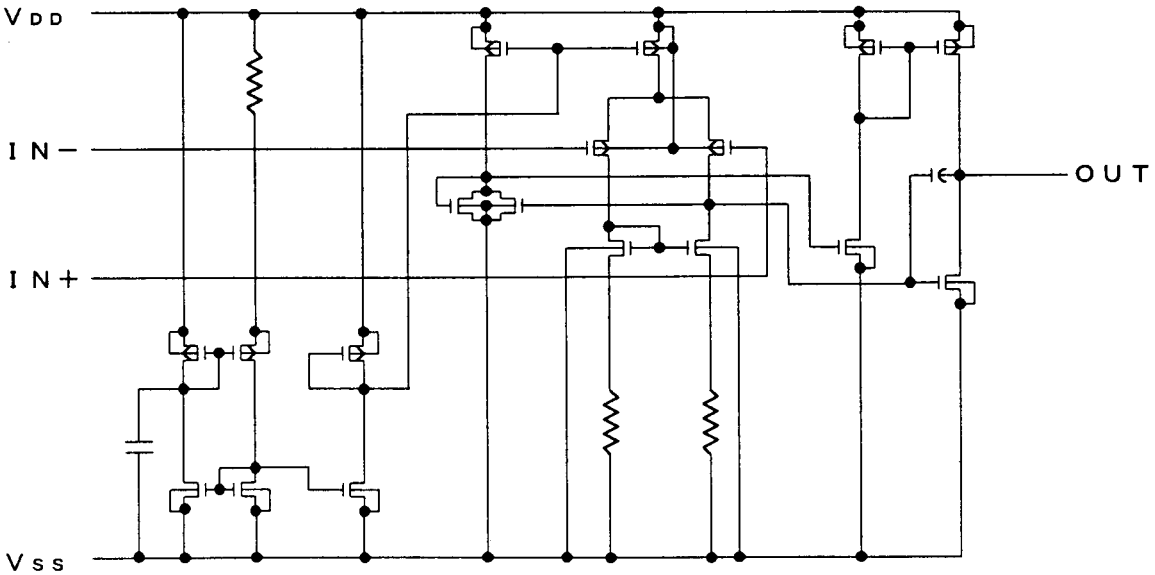
■ FEATURES

- Super Low Operating Current (I_{DD}=3.0μA typ.)
- Single Power Supply (V_{DD}=1.8~3.6V)
- Low Offset Voltage (V_{IO}=2mV max.@ 3.0V)
- Wide Output Swing Range (V_{OM}=2.9V min.@ 3.0V)
- Low Bias Current (I_{IB}=1pA typ.)
- Compensation Capacitor Incorporated
- Package Outline MTP5
- C-MOS Technology

■ 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	200	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} for the stable operation.

■ 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}	-	-	2	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=10MΩ	V_{DD}-0.1	-	-	V
	V_{OM2}	R_L=10MΩ	-	-	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}=3.0~3.6V	60	70	-	dB
Operating Current	I_{DD}		-	3.0	4.5	μA
Slew Rate	SR	C_L=10pF	0.02	0.04	-	V/μs
Unity Gain Bandwidth	F_t	A_V=40dB,C_L=10pF	-	95	-	kHz

(note3) The source current is less than 0.29μA (at V_{OM}/R_L=2.9V/10MΩ).

(note4) The load capacitance (C_L) is less than 200pF.

[CAUTION]
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