

SINGLE-SUPPLY DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

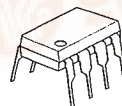
GENERAL DESCRIPTION

The NJM3414A integrated circuit is a high gain, high output current, high output voltage swing dual operational amplifier capable of driving 70mA.

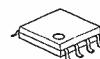
FEATURES

- Single Supply
- Operating Voltage (+3V ~ +15V)
- High Output Current (70mA)
- Slew Rate (1.0V/μs typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

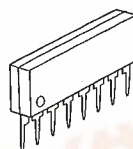
PACKAGE OUTLINE



NJM3414AD



NJM3414AM



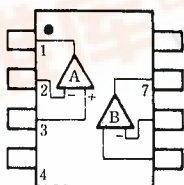
NJM3414AL



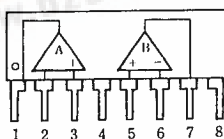
NJM3414AV

※S-Type (SID-9) available

PIN CONFIGURATION



NJM3414AD  
NJM3414AM  
NJM3414AV

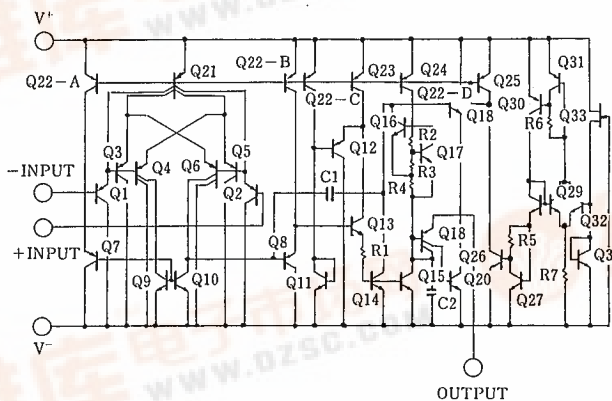


NJM3414AL

PIN FUNCTION

1. A OUTPUT
2. A-ININPUT
3. A+INPUT
4. GND
5. B+INPUT
6. B-ININPUT
7. B OUTPUT
8. V<sup>-</sup>

EQUIVALENT CIRCUIT (1/2 Shown)



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## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*(V*V~)	15V(or ±7.5)	V
Differential Input Voltage	V <sub>ID</sub>	15	V
Input Voltage	V <sub>IC</sub>	-0.3~+15	V
Power Dissipation	P <sub>D</sub>	(DIP8) 500	mW
		(DMP8) 300	mW
		(SSOP8) 250	mW
		(SIP8) 800	mW
Operating Temperature Range	T <sub>opr</sub>	-20~+75	°C
Storage Temperature Range	T <sub>stg</sub>	-40~+125	°C

## ■ ELECTRICAL CHARACTERISTICS

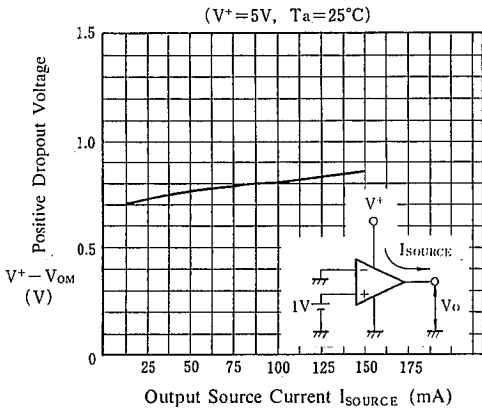
(Ta=25°C, V<sup>+</sup>=8.6V)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	R <sub>S</sub> =0Ω	—	2	5	mV
Input Offset Current	I <sub>IO</sub>		—	5	100	nA
Input Bias Current	I <sub>B</sub>		—	100	500	nA
Large Signal Voltage Gain	A <sub>V</sub>	R <sub>L</sub> =2kΩ	88	100	—	dB
Input Common Voltage Range	V <sub>ICM</sub>		V <sup>+</sup> -2	—	—	V
Maximum Output Voltage Swing 1	V <sub>OM1</sub>	R <sub>L</sub> ≥2kΩ, V <sup>+</sup> =5V	3.5	—	—	V
Maximum Output Voltage Swing 2	V <sub>OM2</sub>	I <sub>O</sub> =70mA, V <sup>+</sup> =5V	3.2	—	—	V
Common Mode Rejection Ratio	CMR		80	90	—	dB
Supply Voltage Rejection Ratio	SVR		80	90	—	dB
Operating Current	I <sub>CC</sub>	R <sub>L</sub> =∞	3	4	5	mA
Slew Rate	SR		—	1.0	—	V/μS
Gain Bandwidth Product	GB		—	1.3	—	MHz
Operating Voltage Range	V <sup>+</sup>		—	—	15	V

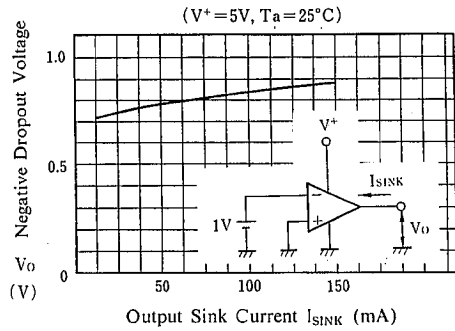
# NJM3414A

## TYPICAL APPLICATIONS

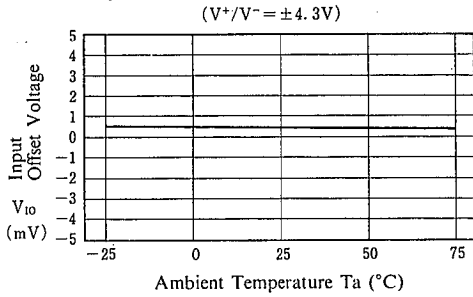
**Output Source Current vs.  $V_{sat}^+$**



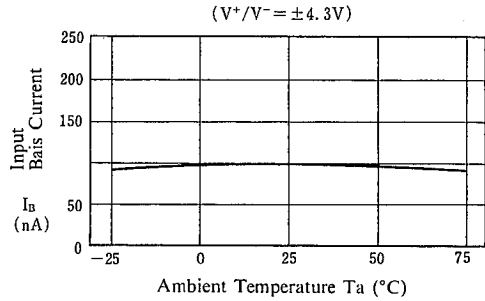
**Output Sink Current vs.  $V_{sat}^-$**



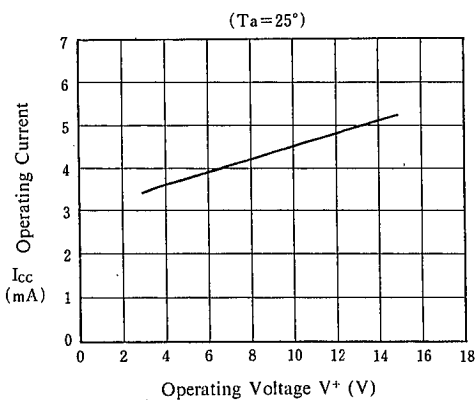
**Input Offset Voltage vs. Temperature**



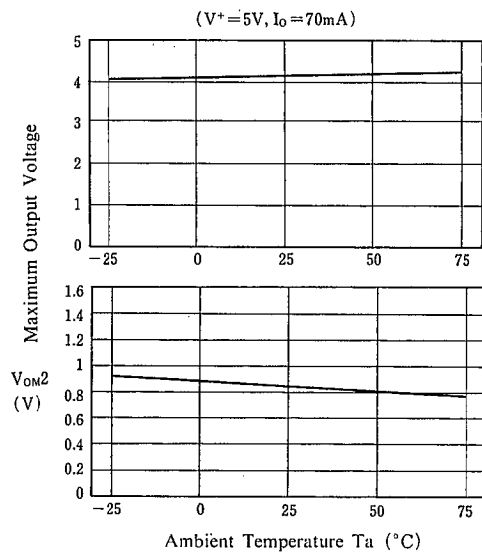
**Input Bias Current vs. Temperature**



**Operating Voltage vs. Operating Current**



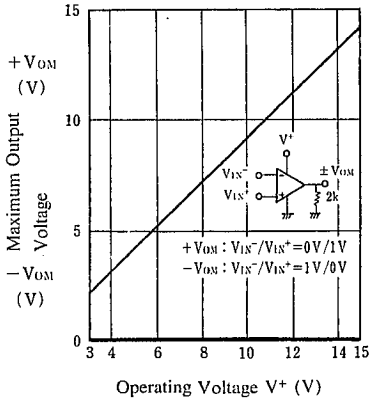
**Maximum Output Voltage Swing 2 vs. Temperature**



## ■ TYPICAL CHARACTERISTICS

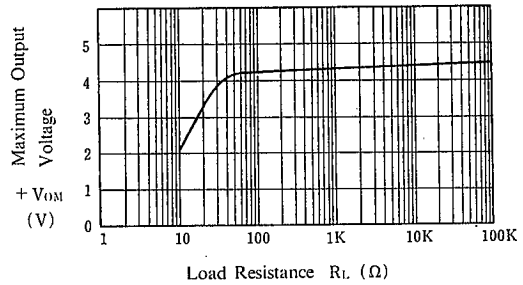
**Maximum Output Voltage vs. Operating Voltage**

( $R_L = 2\text{ k}\Omega$ ,  $T_a = 25^\circ\text{C}$ )



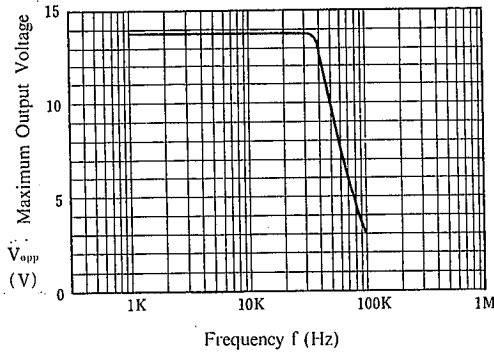
**Maximum Output Voltage vs. Load Resistance**

( $V^+ = 5\text{V}$ ,  $T_a = 25^\circ\text{C}$ )



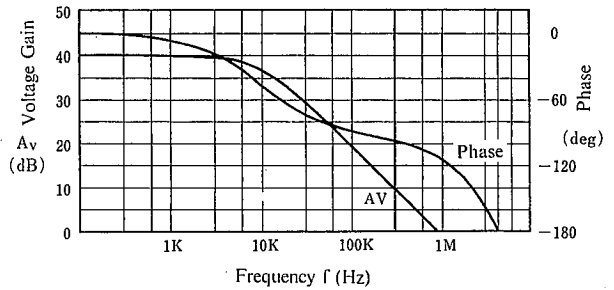
**Maximum Output Voltage vs. Frequency**

( $V^+/V^- = \pm 7.5\text{V}$ ,  $R_L = 2\text{ k}\Omega$ ,  $T_a = 25^\circ\text{C}$ )



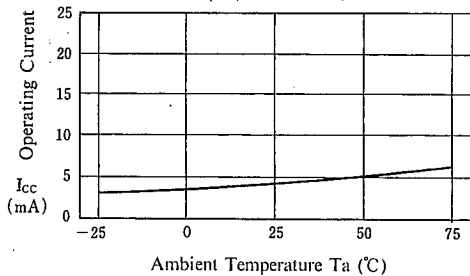
**Voltage Gain, Phase vs. Frequency**

( $V^+/V^- = \pm 4.3\text{V}$ ,  $R_L = 2\text{ k}\Omega$ ,  $A_v = 40\text{dB}$ ,  $T_a = 25^\circ\text{C}$ )



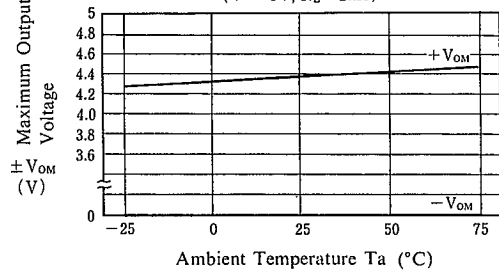
**Operating Current vs. Temperature**

( $V^+/V^- = \pm 4.3\text{V}$ )



**Maximum Output Voltage vs. Temperature**

( $V^+ = 5\text{V}$ ,  $R_L = 2\text{ k}\Omega$ )



# NJM3414A

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## MEMO

**[CAUTION]**

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