

## SINGLE-SUPPLY DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

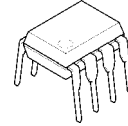
### ■ GENERAL DESCRIPTION

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 typ.)
- Slew Rate (1.0V/μs typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

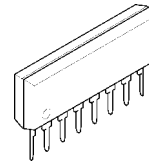
### ■ PACKAGE OUTLINE



NJM3414AD



NJM3414AM

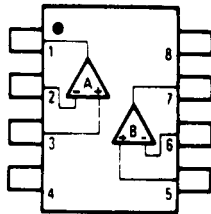


NJM3414AL

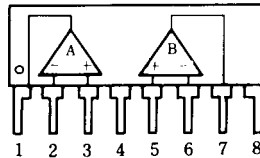


NJM3414AV

### ■ PIN CONFIGURATION



NJM3414AD  
NJM3414AM  
NJM3414AV

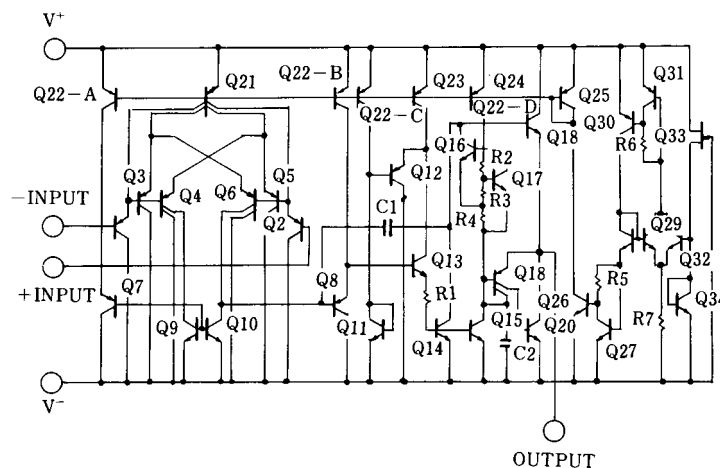


NJM3414AL

### PIN FUNCTION

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

### ■ EQUIVALENT CIRCUIT (1/2 Shown)



# NJM3414A

## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

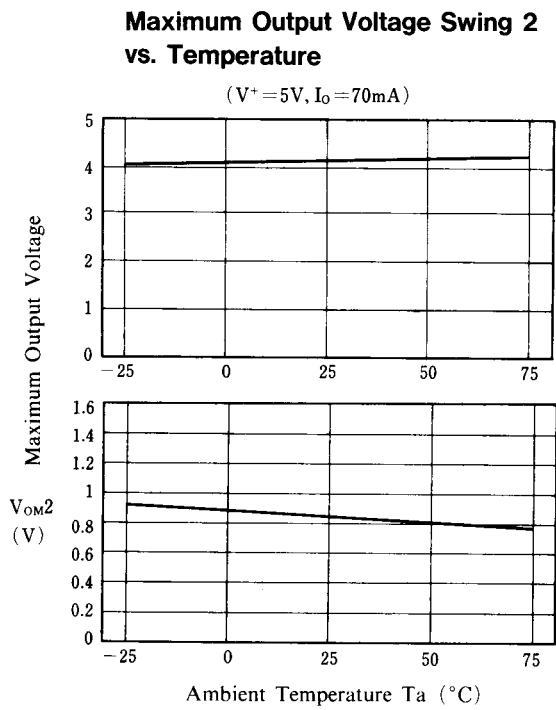
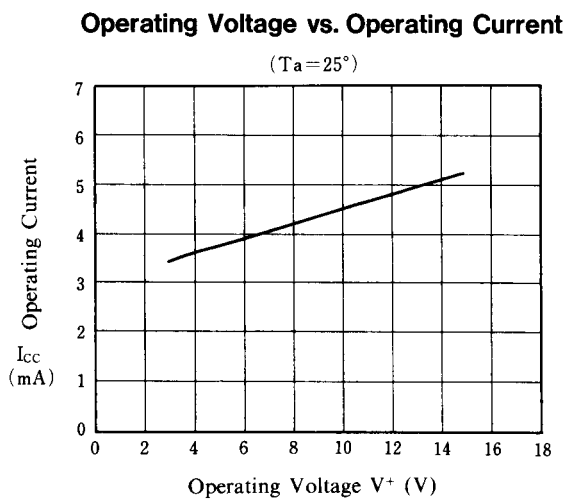
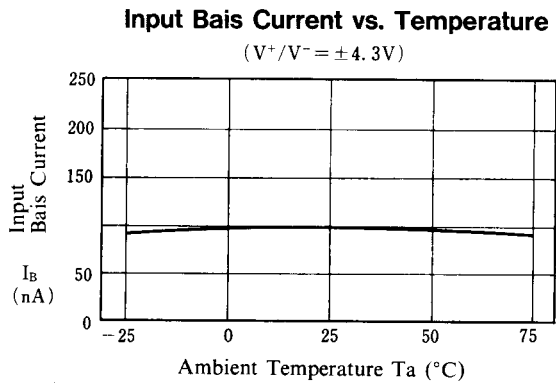
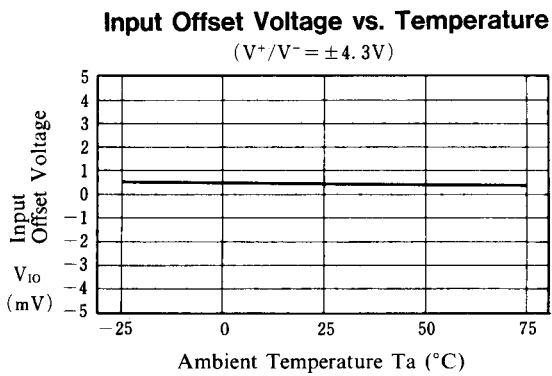
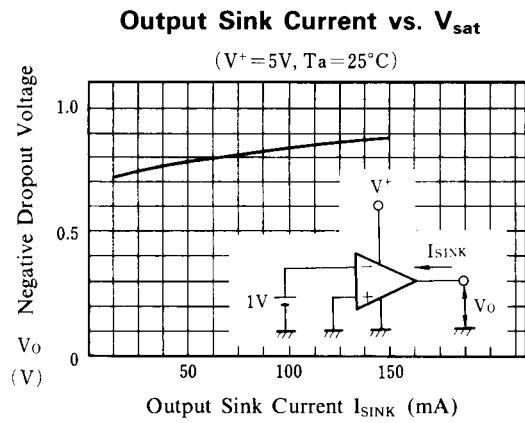
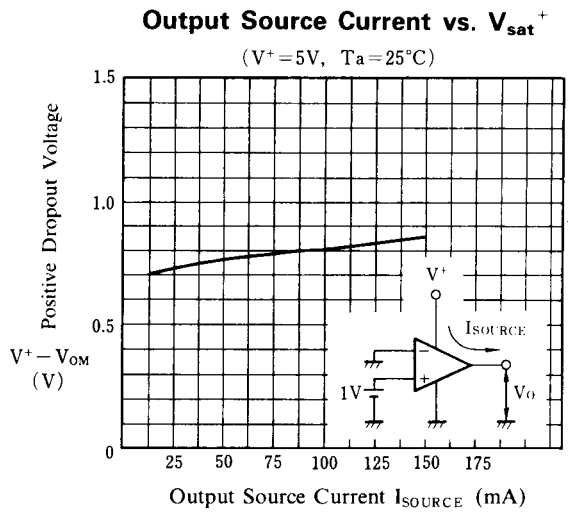
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+(V^-/V)$	15V ( or $\pm 7.5$ )	V
Differential Input Voltage	$V_{ID}$	15	V
Input Voltage	$V_{IC}$	-0.3~+15	V
Power Dissipation	$P_D$	( DIP8 ) 500 ( DMP8 ) 300 ( SSOP8 ) 250 ( SIP8 ) 800	mW
Operating Temperature Range	$T_{opr}$	-40~+85	°C
Storage Temperature Range	$T_{stg}$	-40~+125	°C

## ■ ELECTRICAL CHARACTERISTICS

(Ta=25°C,  $V^+=8.6V$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	$V_{IO}$	$R_S=0\Omega$	-	2	5	mV
Input Offset Current	$I_{IO}$		-	5	100	nA
Input Bias Current	$I_B$		-	100	500	nA
Large Signal Voltage Gain	$A_v$	$R_L=2k\Omega$	88	100	-	dB
Input Common Voltage Range	$V_{ICM}$		$V^+-2$	-	-	V
Maximum Output Voltage Swing 1	$V_{OM1}$	$R_L \geq 2k\Omega, V^+=5V$	3.5	-	-	V
Maximum Output Voltage Swing 2	$V_{OM2}$	$I_O=70mA, V^+=5V$	3.2	-	-	V
Common Mode Rejection Ratio	CMR		80	90	-	dB
Supply Voltage Rejection Ratio	SVR		80	90	-	dB
Operating Current	$I_{CC}$	$R_L=\infty$	3	4	5	mA
Slew Rate	SR		-	1.0	-	V/ $\mu s$
Gain Bandwidth Product	GB		-	1.3	-	MHz
Operating Voltage Range	$V^+$		-	-	15	V

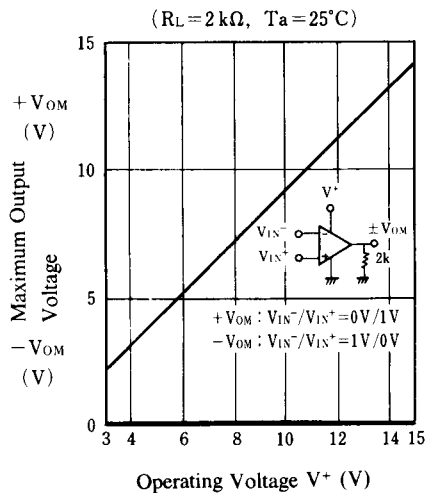
## ■ TYPICAL CHARACTERISTICS



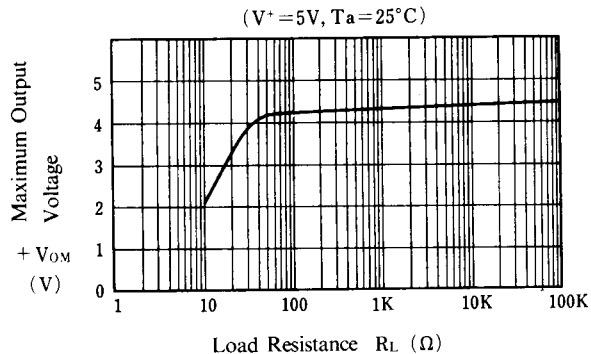
# NJM3414A

## ■ TYPICAL CHARACTERISTICS

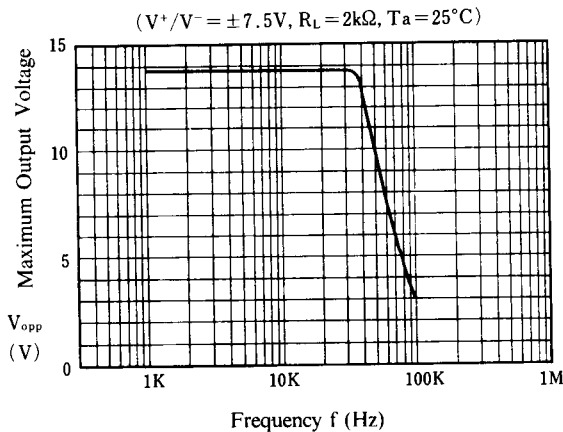
**Maximum Output Voltage vs. Operating Voltage**



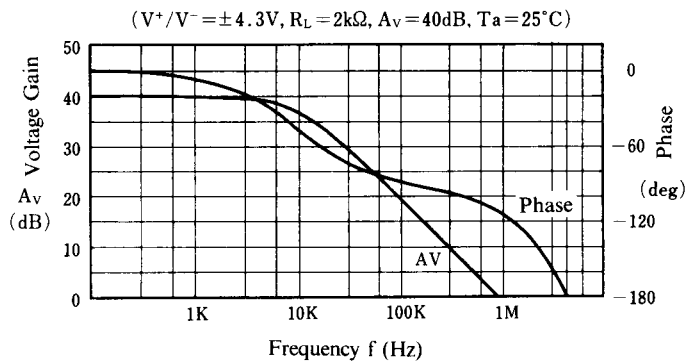
**Maximum Output Voltage vs. Load Resistance**



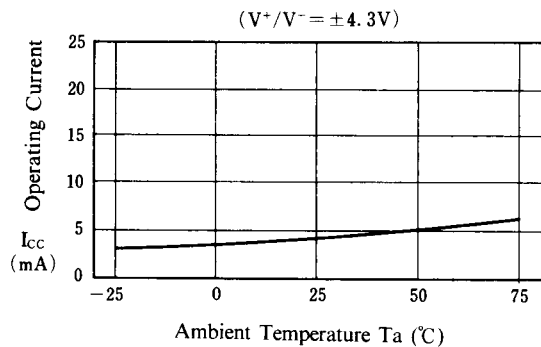
**Maximum Output Voltage vs. Frequency**



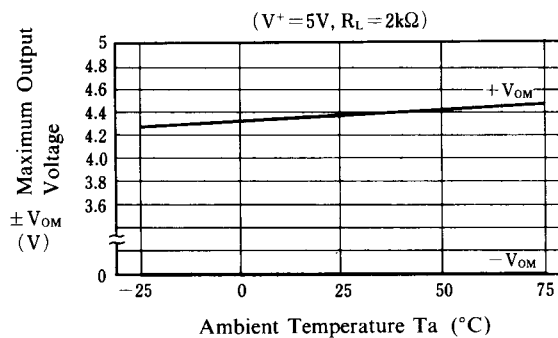
**Voltage Gain, Phase vs. Frequency**



**Operating Current vs. Temperature**



**Maximum Output Voltage vs. Temperature**



**[CAUTION]**

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