

SINGLE-SUPPLY DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

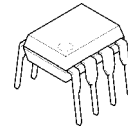
■ GENERAL DESCRIPTION

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

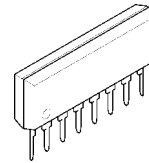
■ PACKAGE OUTLINE



NJM3414AD



NJM3414AM

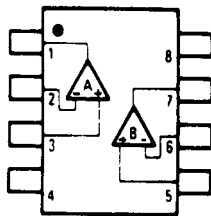


NJM3414AL

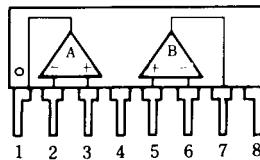


NJM3414AV

■ PIN CONFIGURATION



NJM3414AD
NJM3414AM
NJM3414AV

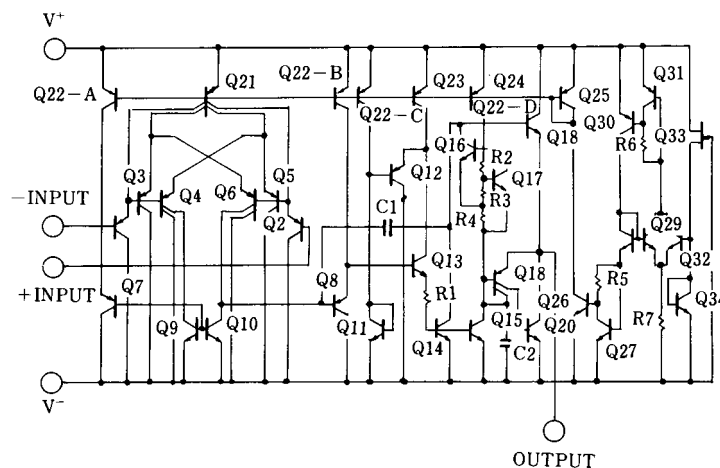


NJM3414AL

PIN FUNCTION

- 1.A OUTPUT
- 2.A -INPUT
- 3.A +INPUT
- 4.V⁻
- 5.B +INPUT
- 6.B -INPUT
- 7.B OUTPUT
- 8.V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



NJM3414A

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

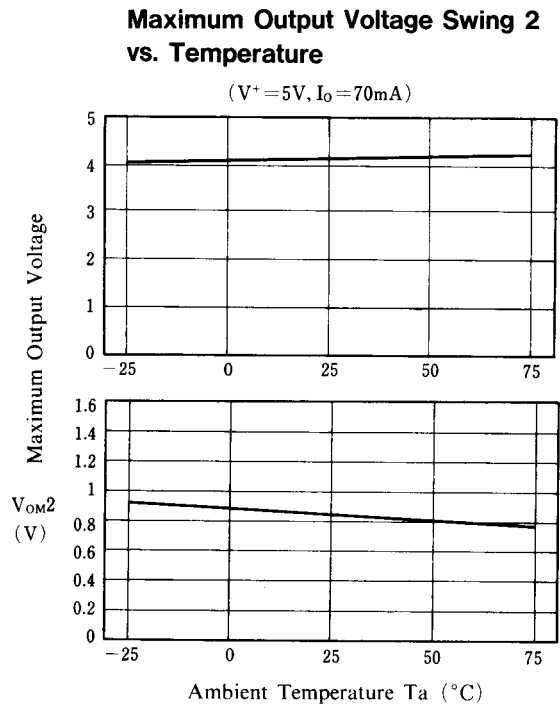
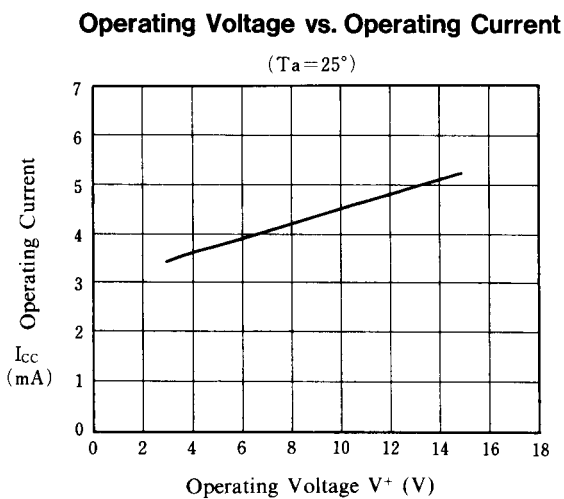
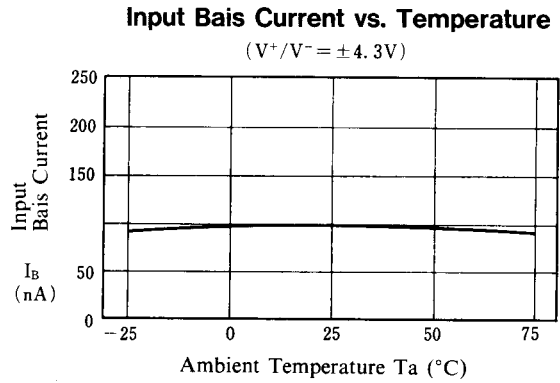
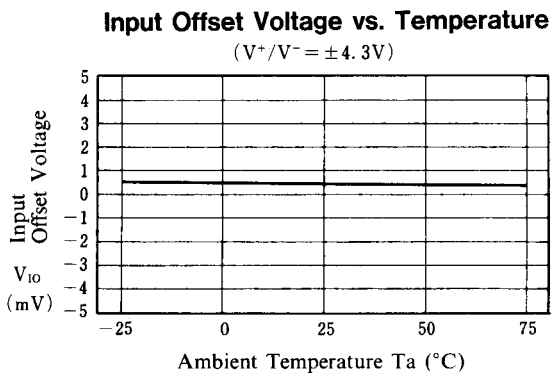
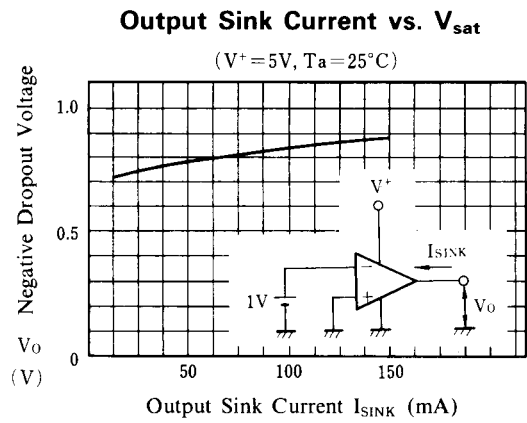
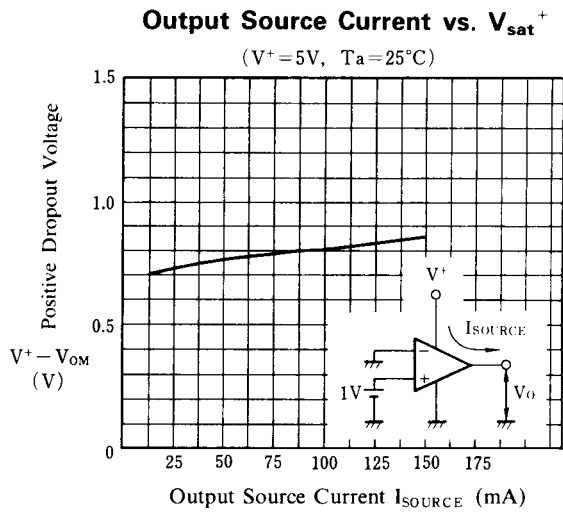
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+(V^-/V)$	15V (or ± 7.5)	V
Differential Input Voltage	V_{ID}	15	V
Input Voltage	V_{IC}	-0.3~+15	V
Power Dissipation	P_D	(DIP8) 500 (DMP8) 300 (SSOP8) 250 (SIP8) 800	mW
Operating Temperature Range	T_{opr}	-40~+85	°C
Storage Temperature Range	T_{stg}	-40~+125	°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/ μs
Gain Bandwidth Product	GB		-	1.3	-	MHz
Operating Voltage Range	V^+		-	-	15	V

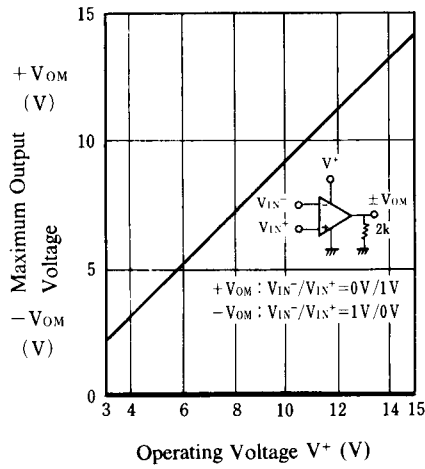
■ TYPICAL CHARACTERISTICS



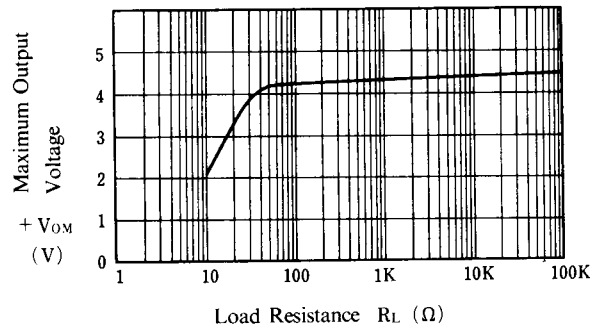
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■ TYPICAL CHARACTERISTICS

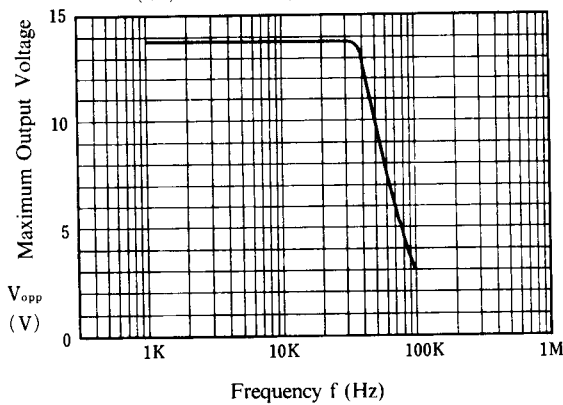
Maximum Output Voltage vs. Operating Voltage
($R_L = 2\text{ k}\Omega$, $T_a = 25^\circ\text{C}$)



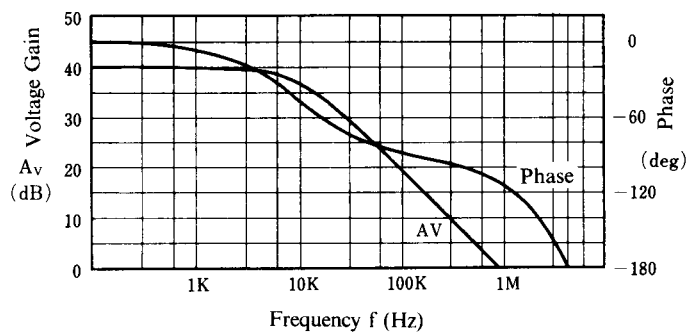
Maximum Output Voltage vs. Load Resistance
($V^+ = 5\text{V}$, $T_a = 25^\circ\text{C}$)



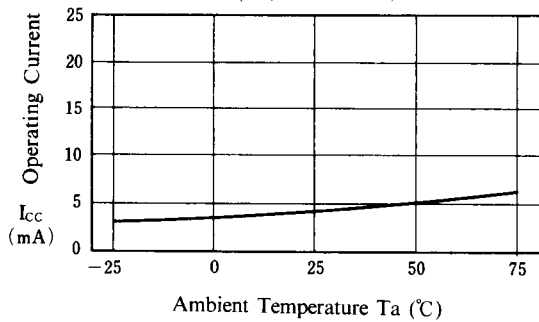
Maximum Output Voltage vs. Frequency
($V^+/V^- = \pm 7.5\text{V}$, $R_L = 2\text{ k}\Omega$, $T_a = 25^\circ\text{C}$)



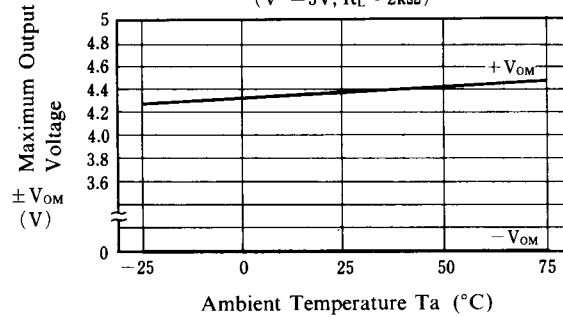
Voltage Gain, Phase vs. Frequency
($V^+/V^- = \pm 4.3\text{V}$, $R_L = 2\text{ k}\Omega$, $A_V = 40\text{dB}$, $T_a = 25^\circ\text{C}$)



Operating Current vs. Temperature
($V^+/V^- = \pm 4.3\text{V}$)



Maximum Output Voltage vs. Temperature
($V^+ = 5\text{V}$, $R_L = 2\text{ k}\Omega$)



[CAUTION]

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