SINGLE-SUPPLY DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

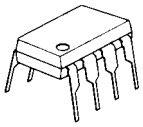
■ GENERAL DESCRIPTION

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

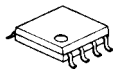
■ FEATURES

- 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

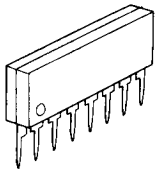
■ PACKAGE OUTLINE



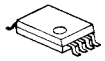
NJM3414AD



NJM3414AM



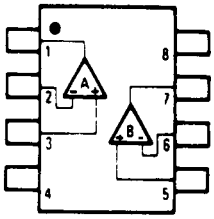
NJM3414AL



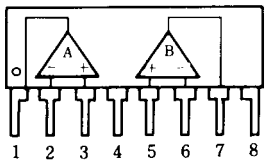
NJM3414AV

* S-Type (SIP9) available

■ PIN CONFIGURATION



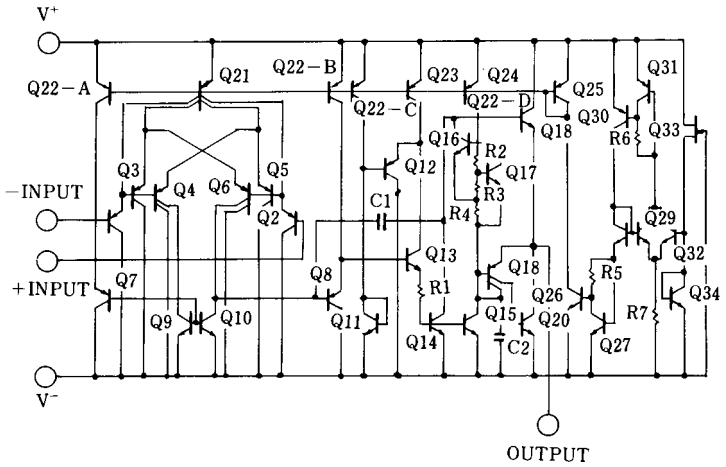
NJM3414AD
NJM3414AM
NJM3414AV



NJM3414AL

PIN FUNCTION
1.A OUTPUT
2.A –INPUT
3.A +INPUT
4.GND
5.B +INPUT
6.B –INPUT
7.B OUTPUT
8.V^+

■ EQUIVALENT CIRCUIT (1/2 Shown)



■ 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}	-20~+75	˚C
Storage Temperature Range	T_{stg}	-40~+125	˚C

■ ELECTRICAL CHARACTERISTICS

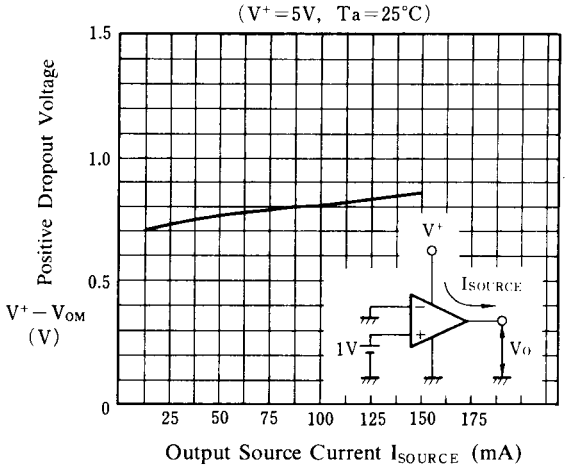
(Ta=25˚C,V^+=8.6V)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S=0Ω	-	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=2kΩ	88	100	-	dB
Input Common Voltage Range	V_{ICM}		V^+-2	-	-	V
Maximum Output Voltage Swing 1	V_{OM1}	R_L≥2kΩ,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=∞	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

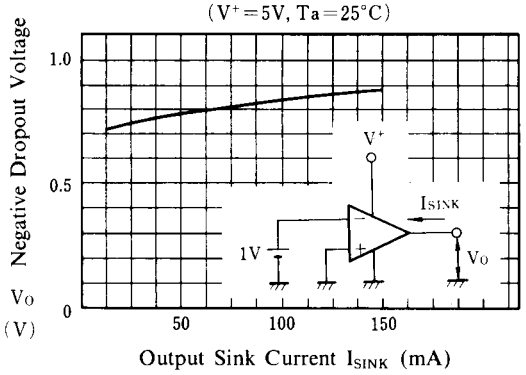
Output Source Current vs. V_{sat}^{+}

(V^+=5V, Ta=25°C)



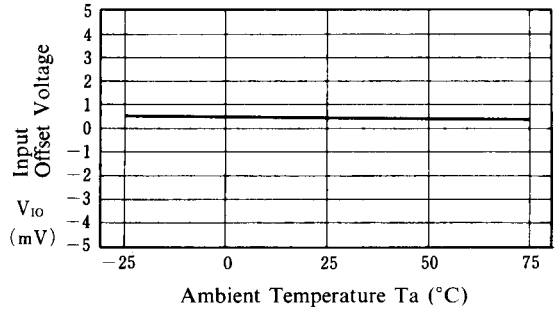
Output Sink Current vs. V_{sat}

(V^+=5V, Ta=25°C)



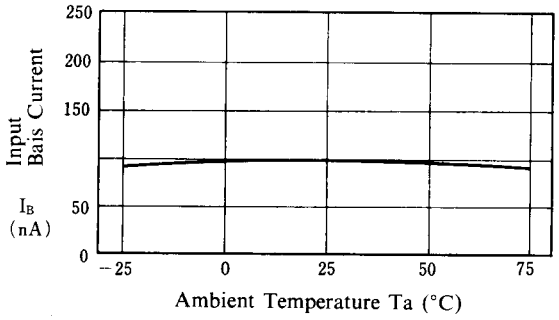
Input Offset Voltage vs. Temperature

(V^+/V^-=±4.3V)



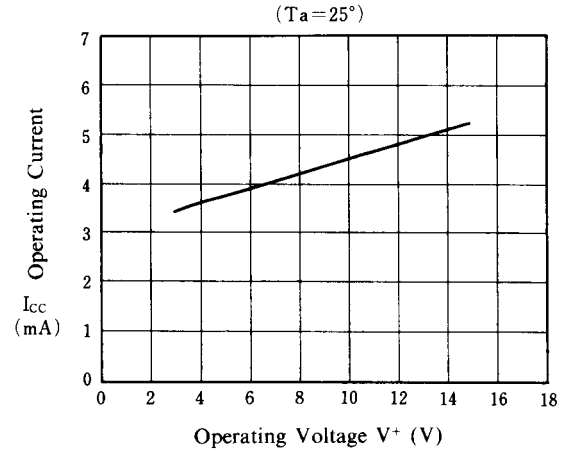
Input Bais Current vs. Temperature

(V^+/V^-=±4.3V)



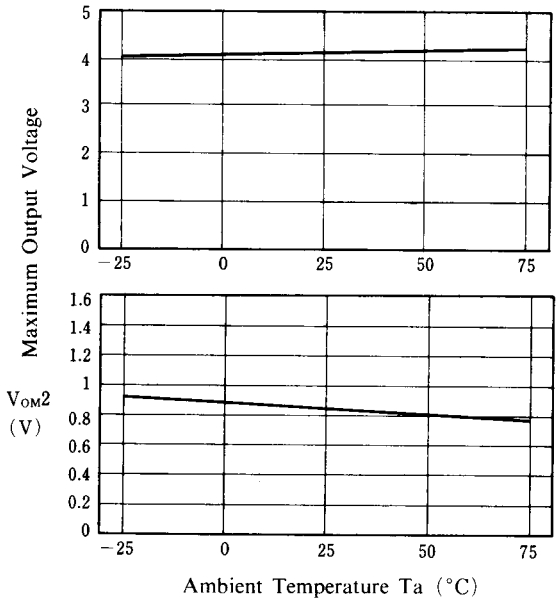
Operating Voltage vs. Operating Current

(Ta=25°)



Maximum Output Voltage Swing 2 vs. Temperature

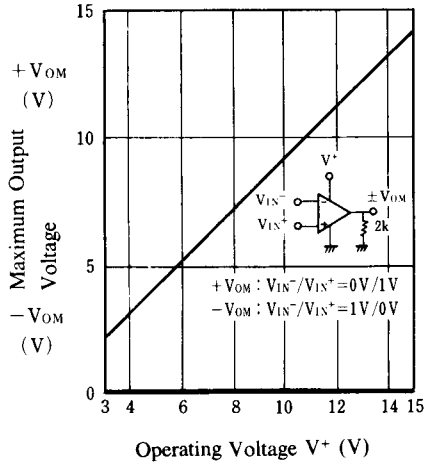
(V^+=5V, I_O=70mA)



■ TYPICAL CHARACTERISTICS

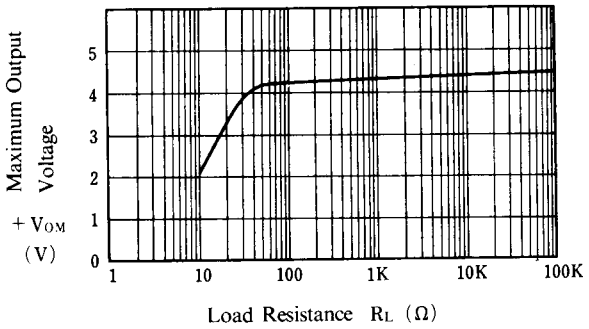
Maximum Output Voltage vs. Operating Voltage

(R_L=2 kΩ, Ta=25°C)



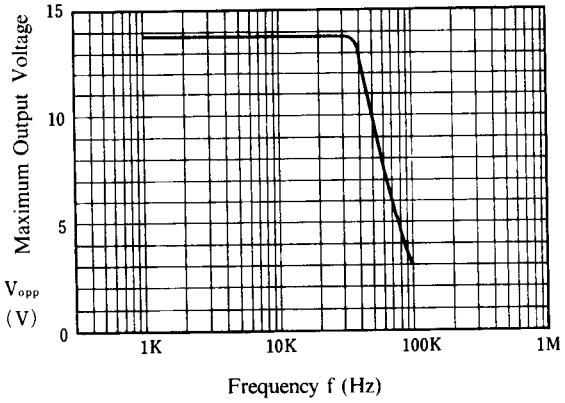
Maximum Output Voltage vs. Load Resistance

(V^+=5V, Ta=25°C)



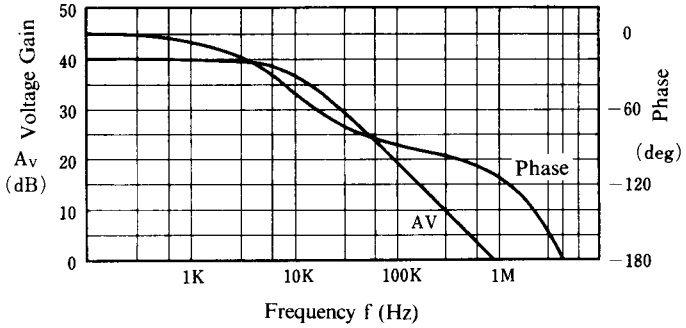
Maximum Output Voltage vs. Frequency

(V^+/V^-=±7.5V, R_L=2kΩ, Ta=25°C)



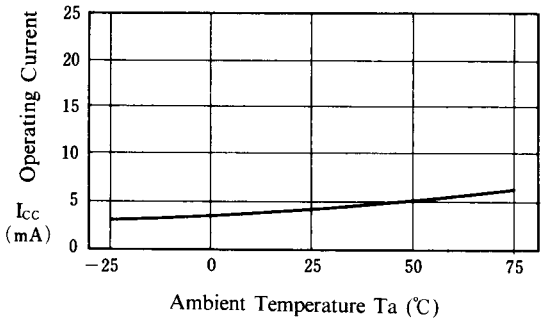
Voltage Gain, Phase vs. Frequency

(V^+/V^-=±4.3V, R_L=2kΩ, A_V=40dB, Ta=25°C)



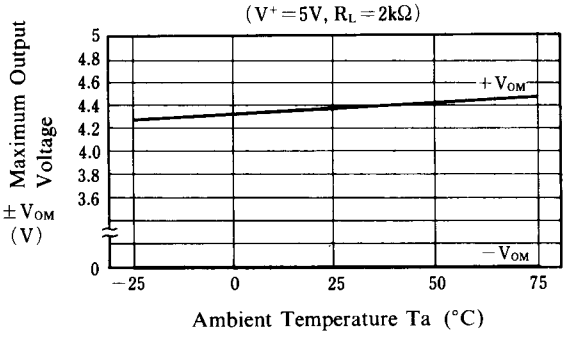
Operating Current vs. Temperature

(V^+/V^-=±4.3V)



Maximum Output Voltage vs. Temperature

(V^+=5V, R_L=2kΩ)



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