SINGLE-SUPPLY DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

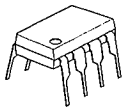
■ GENERAL DESCRIPTION

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

■ FEATURES

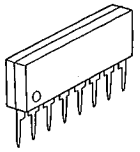
- Single Supply
- Operating Voltage (+3V~+15V)
- High Output Current (70mA)
- Slew Rate (1.0V/μs typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

■ PACKAGE OUTLINE



NJM3414AD

NJM3414AM

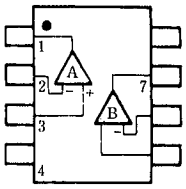


NJM3414AL

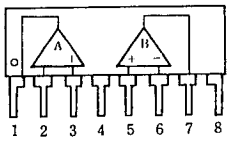
NJM3414AV

※S-Type (SID-9) available

■ PIN CONFIGURATION



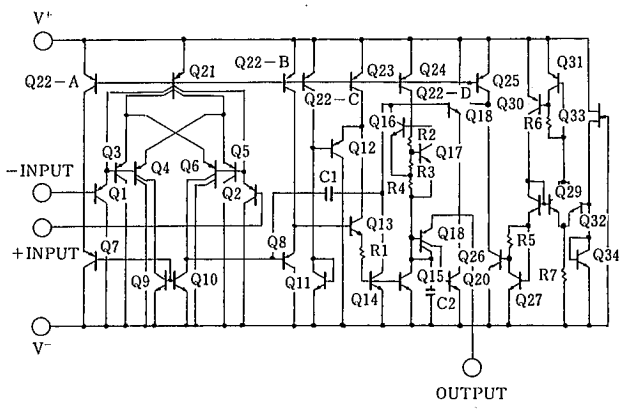
NJM3414AD
NJM3414AM
NJM3414AV



NJM3414AL

PIN FUNCTION
1. A OUTPUT
2. A−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℃)

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	mW
		(DMP8) 300	mW
		(SSOP8) 250	mW
		(SIP8) 800	mW
Operating Temperature Range	T_{opr}	−20～+75	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

■ ELECTRICAL CHARACTERISTICS

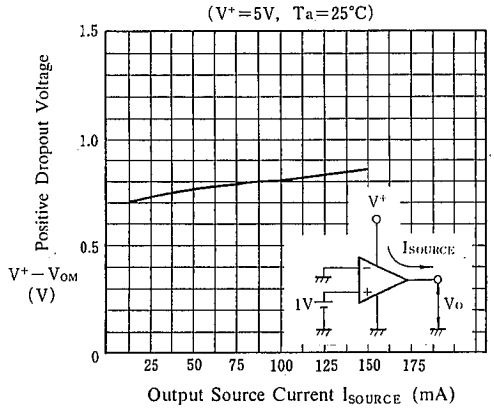
(Ta=25℃, V^+=8.6V)

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 APPLICATIONS

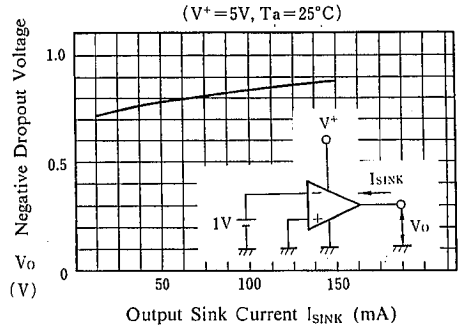
Output Source Current vs. V_{sat}^{+}

(V^+=5V, Ta=25°C)



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

(V^+=5V, Ta=25°C)



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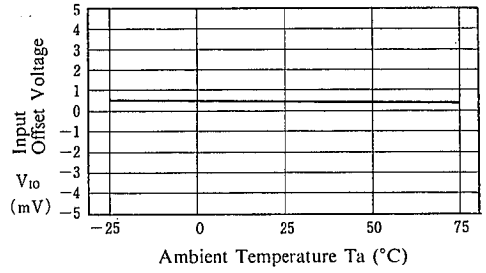
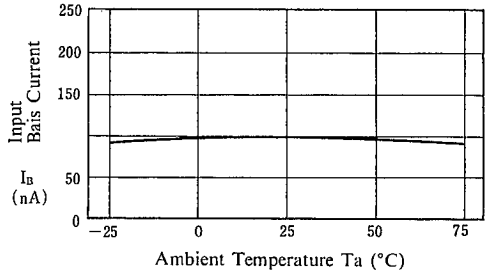
Input Offset Voltage vs. Temperature

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



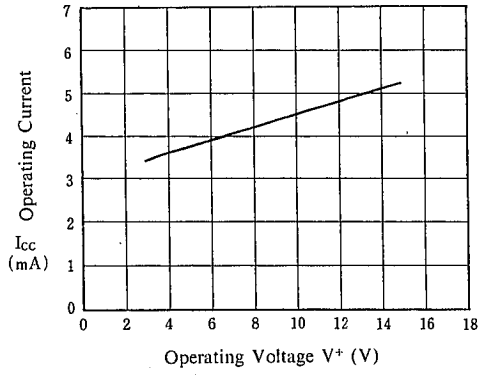
Input Bais Current vs. Temperature

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



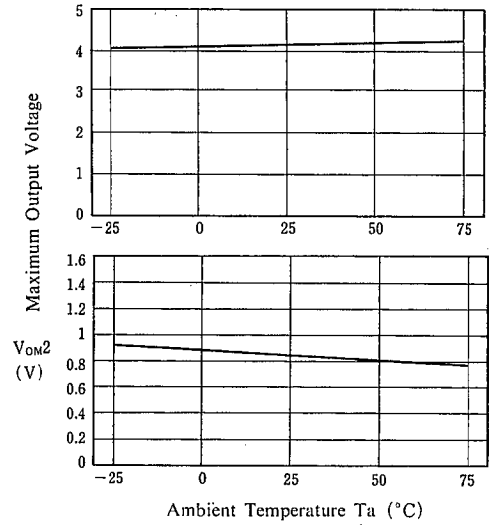
Operating Voltage vs. Operating Current

(Ta=25°)



Maximum Output Voltage Swing 2 vs. Temperature

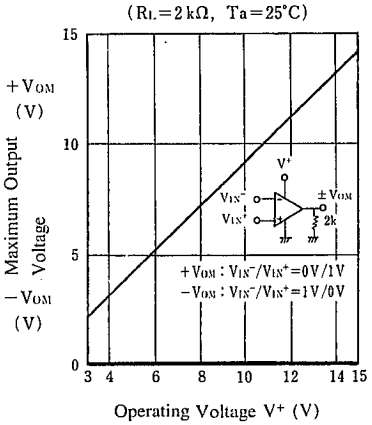
(V^+=5V, I_O=70mA)



■ TYPICAL CHARACTERISTICS

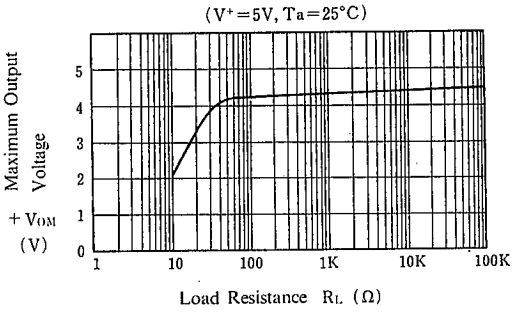
Maximum Output Voltage vs. Operating Voltage

(R_L=2kΩ, Ta=25°C)



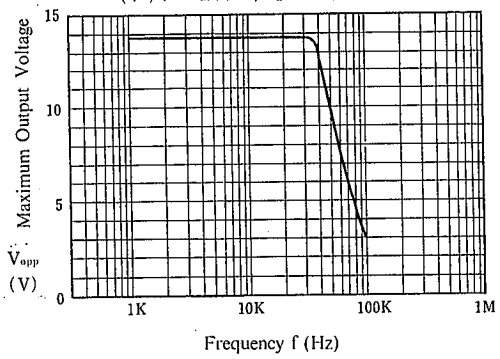
Maximum Output Voltage vs. Load Resistance

(V^+=5V, Ta=25°C)



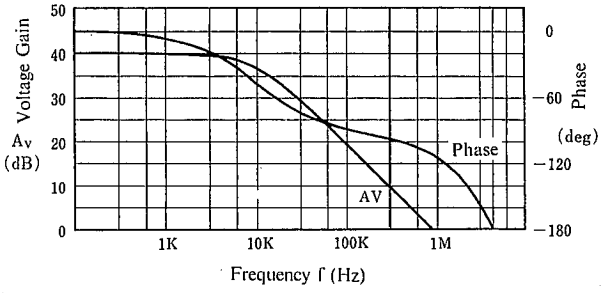
Maximum Output Voltage vs. Frequency

(V^+/V^-=±7.5V, R_L=2kΩ, Ta=25°C)



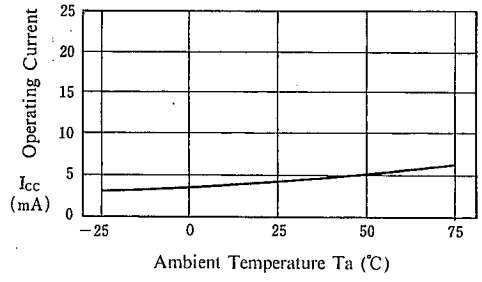
Voltage Gain, Phase vs. Frequency

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



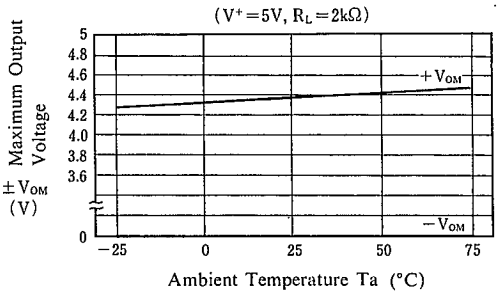
Operating Current vs. Temperature

(V^+/V^-=±4.3V)



Maximum Output Voltage vs. Temperature

(V^+=5V, R_L=2kΩ)



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