

GENERAL PURPOSE QUAD OPERATIONAL AMPLIFIER

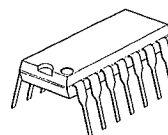
■ GENERAL DESCRIPTION

The NJM4741 consists of four independent high-gain operational amplifiers that are designed for high slew rate, wide band, good noise characteristics.

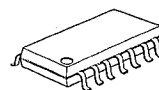
■ FEATURES

- Operating Voltage ($\pm 4V \sim \pm 20V$)
- WideBand (3.5MHz typ.)
- Slew Rate ($1.6V/\mu s$ typ.)
- Low Input Noise Voltage ($9nV/\sqrt{Hz}$ typ.)
- Low Distortion (0.0005% typ.)
- Package Outline DIP14, DMP14.
- Bipolar Technology

■ PACKAGE OUTLINE

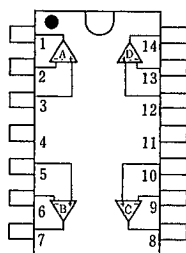


NJM4741D



NJM4741M

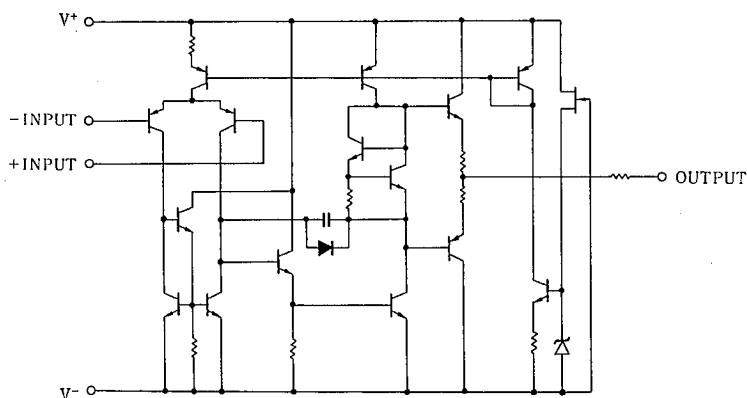
■ CONNECTION DIAGRAM



PIN FUNCTION

1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V^+
5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. C OUTPUT
9. C-INPUT
10. C+INPUT
11. V^-
12. D+INPUT
13. D-INPUT
14. D OUTPUT

■ EQUIVALENT CIRCUIT (1/4 Shown)



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺ /V ⁻	±20	V
Differential Input Voltage	V _{ID}	±30	V
Input Voltage	V _{IC}	±15 (note)	V
Power Dissipation	P _D	(DIP14) 500	mW
		(DMP14) 300	mW
		(SSOP14) 300	mW
Operating Temperature Range	T _{opr}	-40 ~ +85	°C
Storage Temperature Range	T _{stg}	-40 ~ +125	°C

(note) When the supply voltage is less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V⁺/V⁻=±15V)

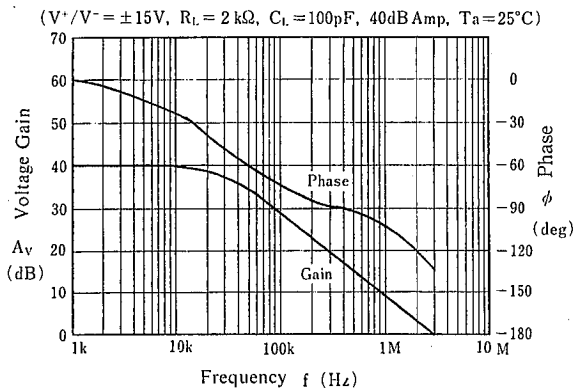
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}	R _S ≤ 100kΩ	—	1.0	5.0	mV
Input Offset Current	I _{IO}		—	30	50	nA
Input Bias Current	I _B		—	100	300	nA
Large Signal Voltage Gain	A _V	R _L ≥ 2kΩ, V _O = ±10V	88	94	—	dB
Operating Current	I _{CC}		—	—	7	mA
Common Mode Rejection Ratio	CMR		80	120	—	dB
Supply Voltage Rejection Ratio	SVR		80	120	—	dB
Maximum Output Voltage 1	V _{OM1}	R _L ≥ 10kΩ	±12	±13.7	—	V
Maximum Output Voltage 2	V _{OM2}	R _L ≥ 2kΩ	±10	±12.5	—	V
Input Common Mode Voltage Range	V _{ICM}		±12	±14	—	V
Slew Rate	SR	A _V = 1	—	1.6	—	V/μs
Equivalent Input Noise Voltage	e _n	f = 1kHz	—	9	—	nV/√Hz
Channel Separation	CS	f = 10kHz, Input Referred	—	108	—	dB

(note):

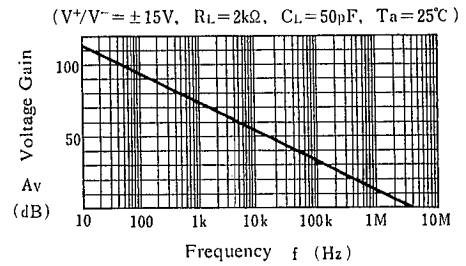
The application which leads to the extreme difference of power dissipation between channels may cause the mutual interference by the temperature gradient on the chip.

■ TYPICAL CHARACTERISTICS

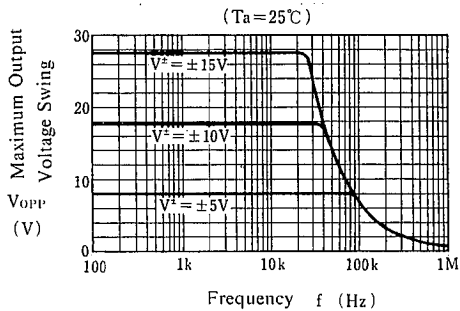
Voltage Gain, Phase vs. Frequency



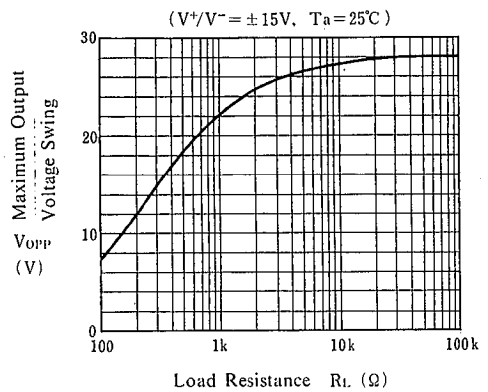
Voltage Gain vs. Frequency



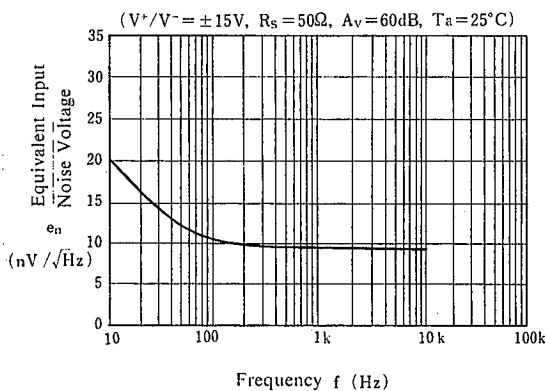
Maximum Output Voltage Swing vs. Frequency



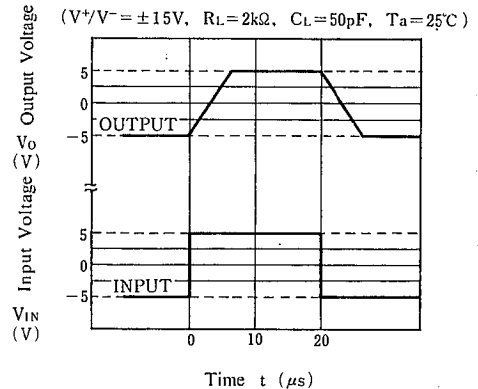
Maximum Output Voltage Swing vs. Load Resistance



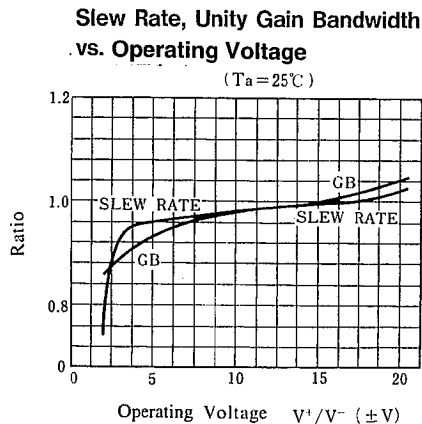
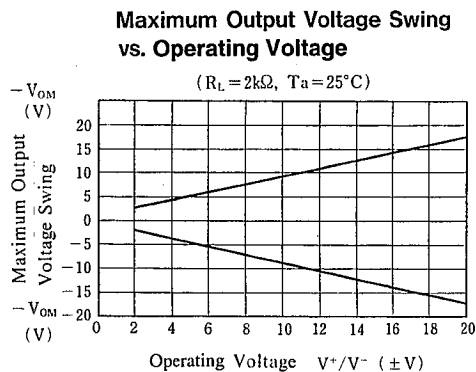
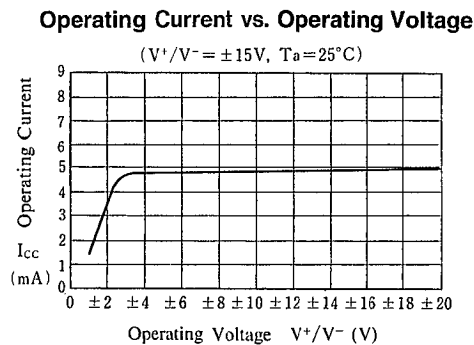
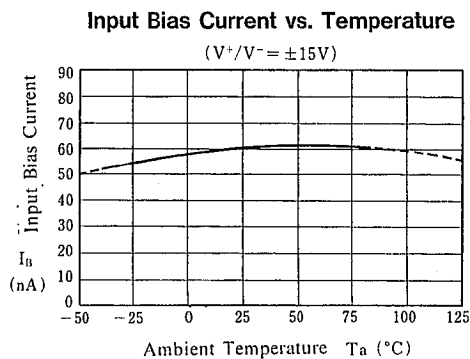
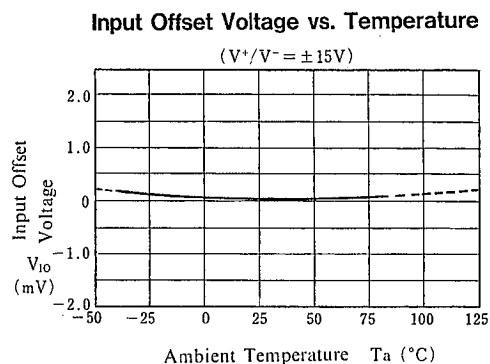
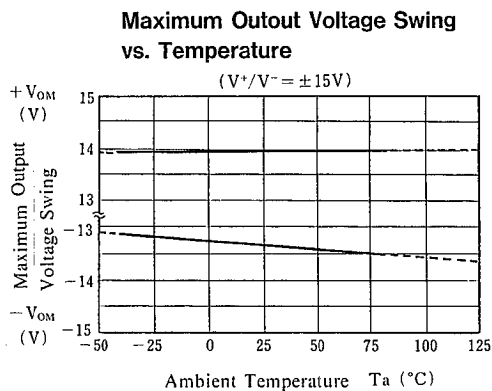
Equivalent Input Noise Voltage vs. Frequency



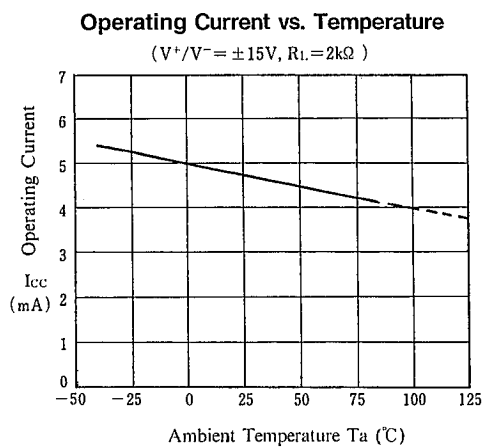
Pulse Response



■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



4

MEMO

[CAUTION]

The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.