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New Japan Radio Co.,Ltd.

www.njr.com

GENERAL PURPOSE QUAD OPERATIONAL AMPLIFIER

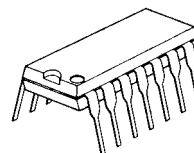
■ GENERAL DESCRIPTION

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

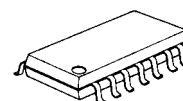
■ FEATURES

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

■ PACKAGE OUTLINE

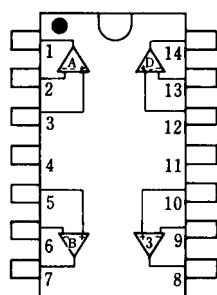


NJM4741D



NJM4741M

■ PIN CONFIGURATION

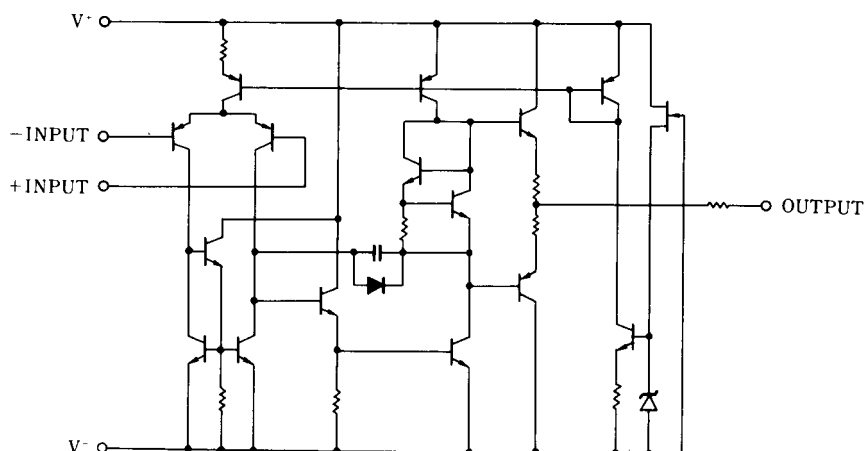


NJM4741D
NJM4741M

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)



NJM4741

■ 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 (DMP14) 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 $\pm 15V$, the absolute maximum input voltage is equal to the supply voltage.

■ ELECTRICAL CHARACTERISTICS

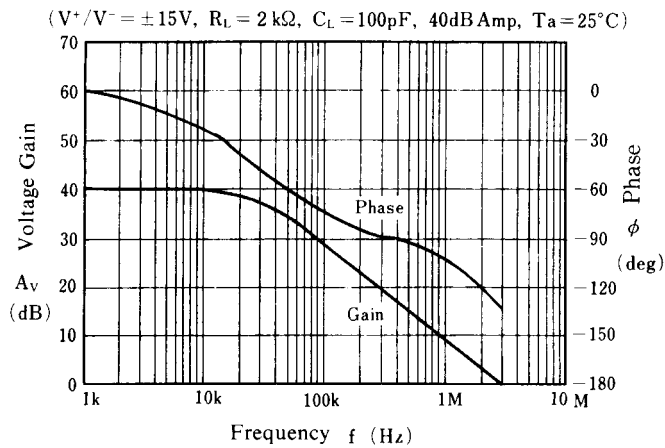
(Ta=25°C, $V^+ / V^- = \pm 15V$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	$R_s \leq 100\Omega$	-	1.0	5.0	mV
Input Offset Current	I_{IO}		-	5	50	nA
Input Bias Current	I_B		-	60	300	nA
Large Signal Voltage Gain	A_V	$R_L \geq 2k\Omega, V_O = \pm 10V$	88	110	-	dB
Operating Current	I_{CC}		-	5	7	mA
Common Mode Rejection Ratio	CMR		80	120	-	dB
Supply Voltage Rejection Ratio	SVR		80	120	-	dB
Maximum Output Voltage 1	V_{OM1}	$R_L \geq 10k\Omega$	± 12	± 13.7	-	V
Maximum Output Voltage 2	V_{OM2}	$R_L \geq 2k\Omega$	± 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/ $\sqrt{Hz}$
Channel Separation	CS	$f = 10kHz$, Input Referred	-	108	-	dB

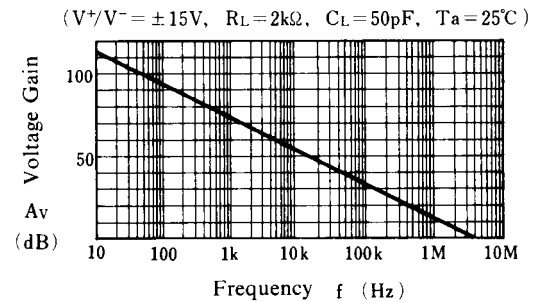
(note) The application that leads to the extreme difference of power dissipation between channels may cause the mutual interference by the temperature gradient on the chip.

■ TYPICAL CHARACTERISTICS

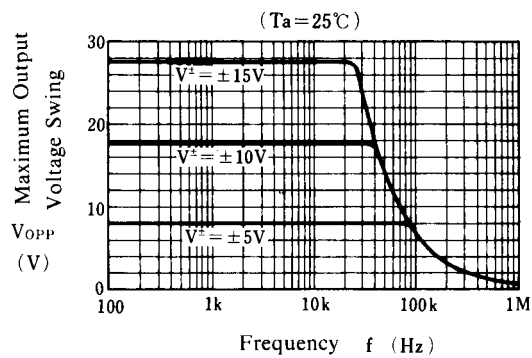
Voltage Gain, Phase vs. Frequency



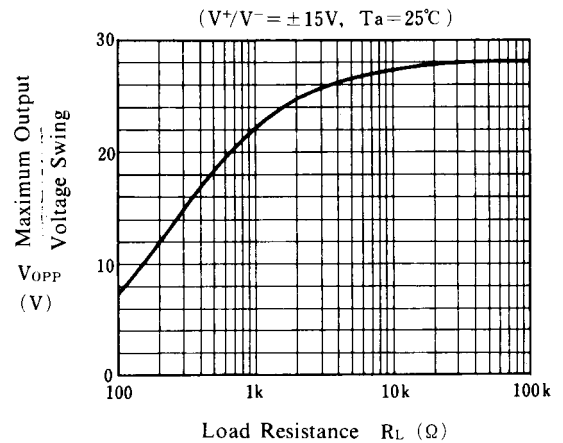
Voltage Gain vs. Frequency



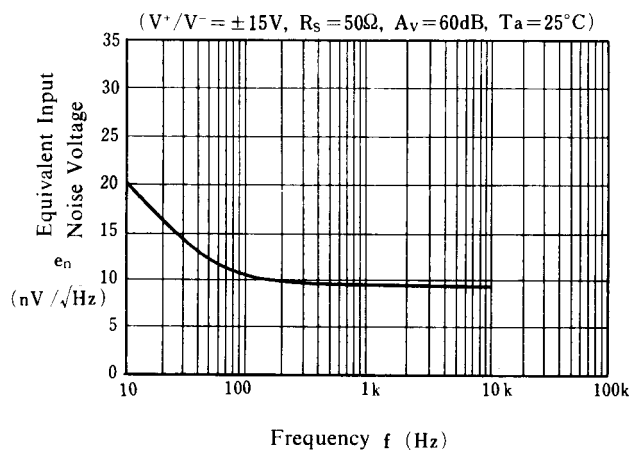
Maximum Output Voltage Swing vs. Frequency



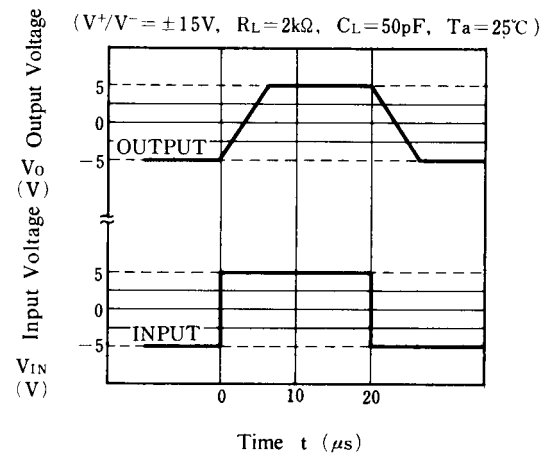
Maximum Output Voltage Swing vs. Load Resistance



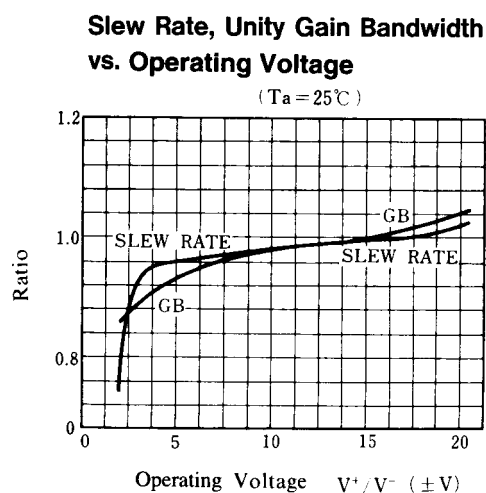
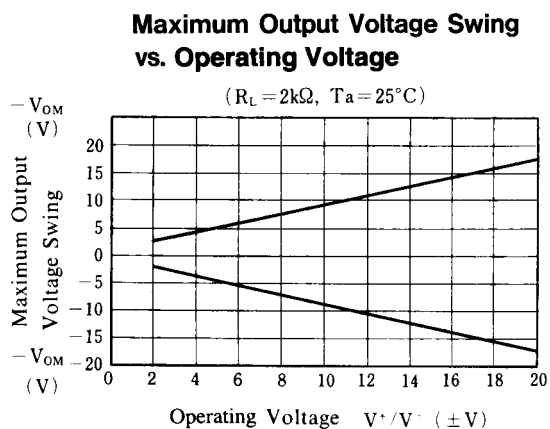
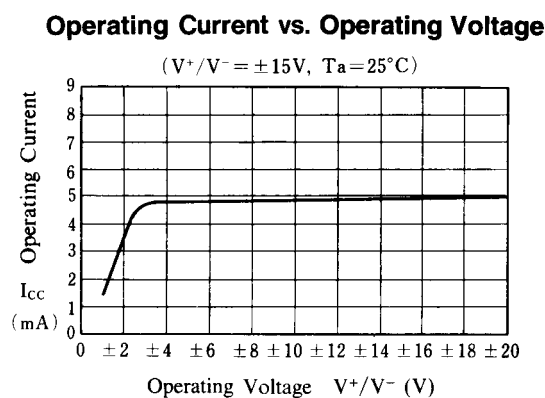
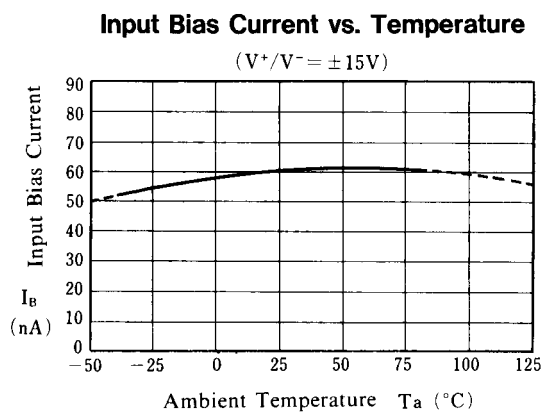
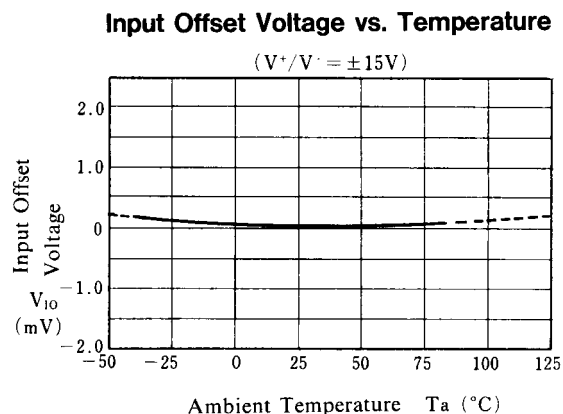
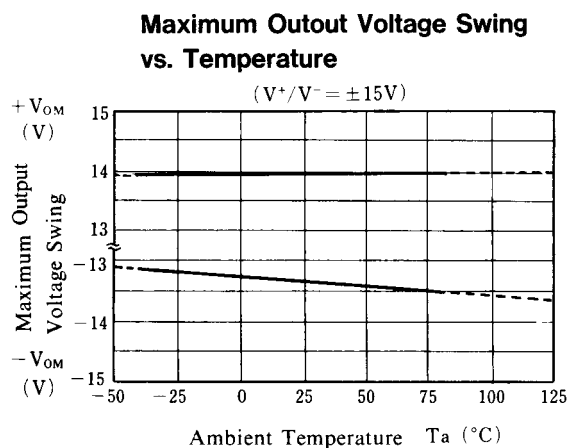
Equivalent Input Noise Voltage vs. Frequency



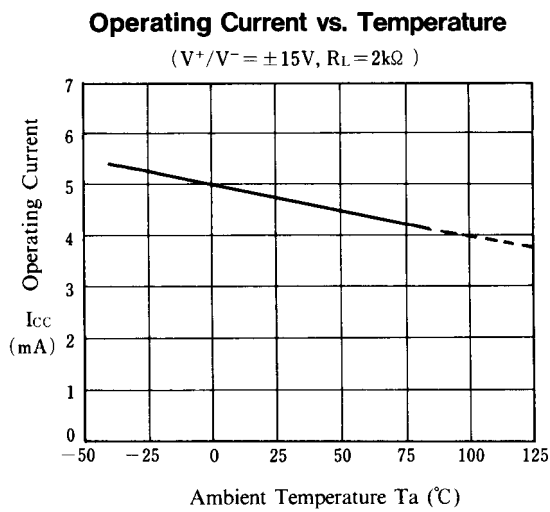
Pulse Response



■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



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