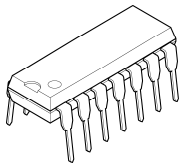
QUAD J-FET INPUT OPERATIONAL AMPLIFIER

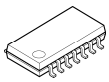
■ GENERAL DESCRIPTION

The NJM074 is a quad JFET input operational amplifier.

■ PACKAGE OUTLINE



NJM074D



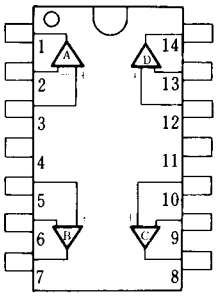
NJM074M

NJM074V

■ FEATURES

- Operating Voltage (±4V~±18V)
- J-FET Input
- High Input Resistance ($10^{12}\Omega$ typ.)
- Low Input Bias Current (30pA typ.)
- High Slew Rate (13V/μs typ.)
- Wide Unity Gain Bandwidth (3MHz typ.)
- Package Outline DIP14, DMP14, SSOP14
- Bipolar Technology

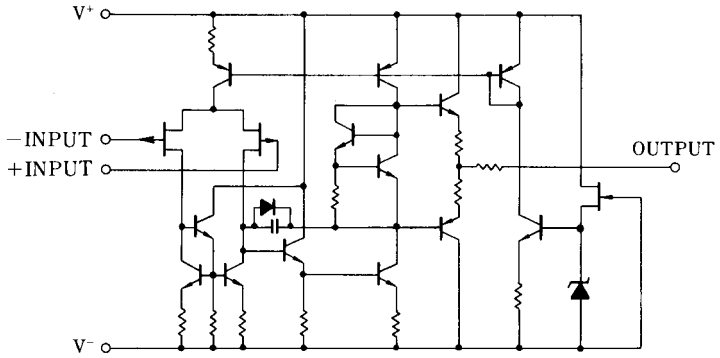
■ PIN CONFIGURATION



NJM074D
NJM074M
NJM074V

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^-	± 18	V
Differential Input Voltage	V_{ID}	± 30	V
Input Voltage	V_{IC}	± 15 (note1)	V
Power Dissipation	P_D	(DIP14) 700 (DMP14) 700 (note2) (SSOP14) 300	mW
Operating Temperature Range	T_{opr}	-40~+85	˚C
Storage Temperature Range	T_{stg}	-40~+125	˚C

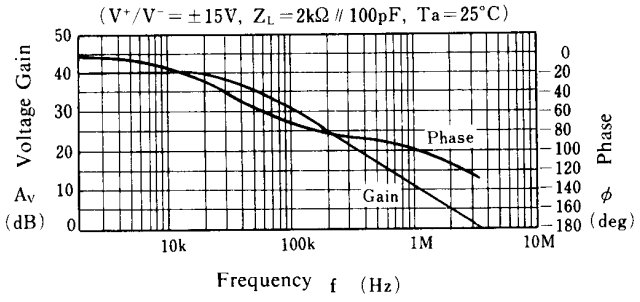
(note1) For supply voltage less than ±15V. the absolute maximum input voltage is equal to the supply voltage.
(note2) At on PC board

■ ELECTRICAL CHARACTERISTICS (Ta=+25˚C,V^+/V^-=±15V)

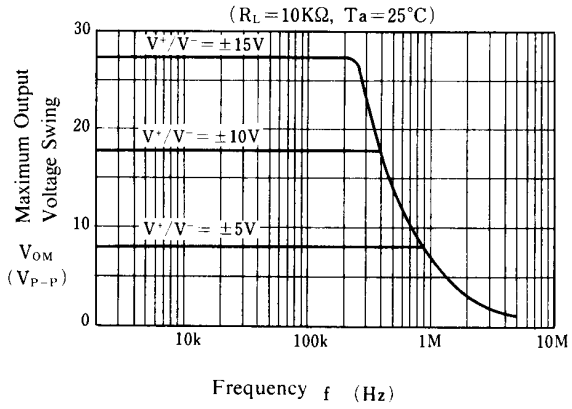
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S=50Ω	-	3	10	mV
Input Offset Current	I_{IO}		-	5	50	pA
Input Bias Current	I_B		-	30	200	pA
Input Common Mode Voltage Range	V_{ICM}		± 10	-	-	V
Maximum Peak-to-peak Output Voltage Swing	V_{OPP}	R_L=10kΩ	24	27	-	V_{P-P}
Large-Signal Voltage Gain	A_V	R_L≥2kΩ,V_O=±10V	88	106	-	dB
Unity Gain Bandwidth	f_T		-	3	-	MHz
Input Resistance	R_{IN}		-	10^{12}	-	Ω
Common Mode Rejection Ratio	CMR	R_S≤10kΩ	70	76	-	dB
Supply Voltage Rejection Ratio	SVR	R_S≤10kΩ	70	76	-	dB
Operating Current	I_{CC}		-	6	10	mA
Slew Rate	SR		-	13	-	V/μs
Equivalent Input Noise Voltage	V_{NI}	R_S=100Ω,B.W.=10~10kHz	-	4	-	μV_{rms}

■ TYPICAL CHARACTERISTICS

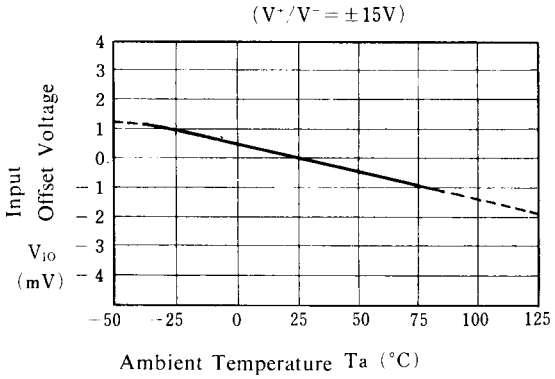
Voltage Gain, Phase Shift vs. Frequency



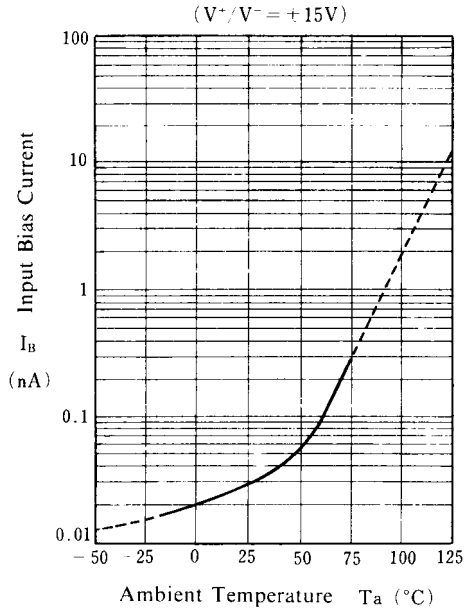
Maximum Output Voltage Swing vs. Frequency



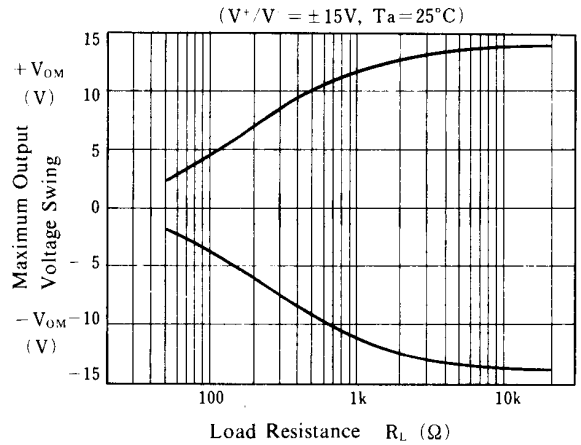
Input Offset Voltage vs. Temperature



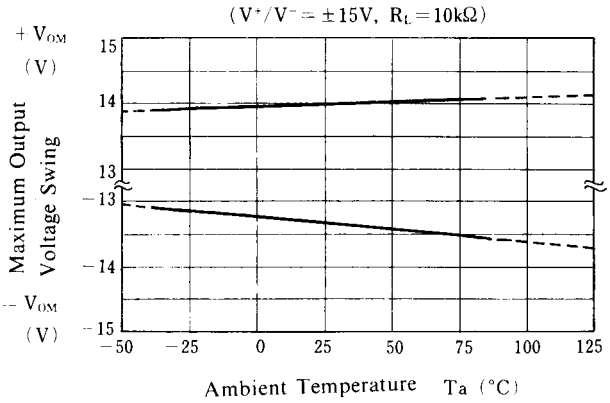
Input Bias Current vs. Temperature



Maximum Output Voltage Swing vs. Load Resistance



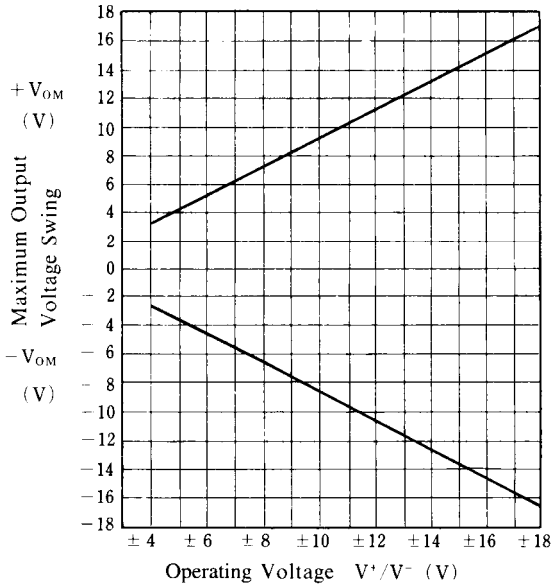
Maximum Output Voltage Swing vs. Temperature



■ TYPICAL CHARACTERISTICS

Maximum Output Voltage Swing vs. Operating Voltage

(R_L = 10kΩ, Ta = 25°C)



Equivalent Input Voltage Noise vs. Frequency

(V^+/V^- = ±15V, R_S = 100Ω, Ta = 25°C)