

## QUAD J-FET INPUT OPERATIONAL AMPLIFIER

## ■ GENERAL DESCRIPTION

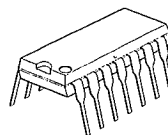
The NJM074/084 are quad JFET input operational amplifiers.

The NJM074/084 have the same electrical characteristics of NJM072B/082B except supply current.

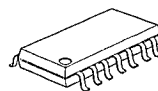
## ■ FEATURES

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

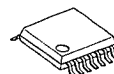
## ■ PACKAGE OUTLINE



NJM074D  
NJM084D

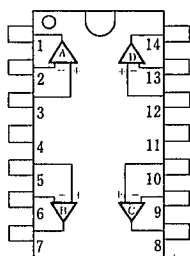


NJM074M  
NJM084M



NJM074V  
NJM084V

## ■ PIN CONFIGURATION

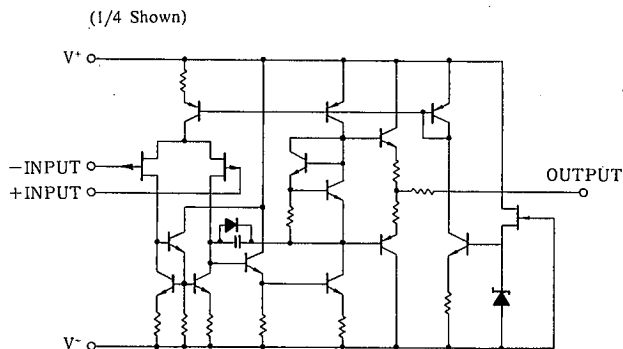


NJM074D/084D  
NJM074M/084M  
NJM074V/084V

## 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



## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

| PARAMETER                   | SYMBOL                         | RATINGS             | UNIT |
|-----------------------------|--------------------------------|---------------------|------|
| Supply Voltage              | V <sup>+</sup> /V <sup>-</sup> | ±18                 | V    |
| Differential Input Voltage  | V <sub>ID</sub>                | ±30                 | V    |
| Input Voltage               | V <sub>IC</sub>                | ±15(note 1)         | V    |
| Power Dissipation           | P <sub>D</sub>                 | (DIP14) 700         | mW   |
|                             |                                | (DMP14) 700(note 2) | mW   |
|                             |                                | (SSOP14) 300        | mW   |
| Operating Temperature Range | T <sub>opr</sub>               | -20~+75             | °C   |
| Storage Temperature Range   | T <sub>stg</sub>               | -40~+125            | °C   |

(note 1) For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

(note 2) at on PC board

## ■ ELECTRICAL CHARACTERISTICS (Ta=+25°C, V<sup>+</sup>/V<sup>-</sup>=±15V)

( ) Applies to NJM084

| PARAMETER                                 | SYMBOL           | TEST CONDITION                            | MIN. | TYP.             | MAX.     | UNIT             |
|-------------------------------------------|------------------|-------------------------------------------|------|------------------|----------|------------------|
| Input Offset Voltage                      | V <sub>IO</sub>  | R <sub>S</sub> =50Ω                       | —    | 3(5)             | 10(15)   | mV               |
| Input Offset Current                      | I <sub>IO</sub>  |                                           | —    | 5                | 50(200)  | pA               |
| Input Bias Current                        | I <sub>B</sub>   |                                           | —    | 30               | 200(400) | pA               |
| Input Common Mode Voltage Range           | V <sub>ICM</sub> |                                           | ±10  | —                | —        | V                |
| Maximum Peak-to-peak Output Voltage Swing | V <sub>OPP</sub> | R <sub>L</sub> =10kΩ                      | 24   | 27               | —        | V <sub>p-p</sub> |
| Large-Signal Voltage Gain                 | A <sub>V</sub>   | R <sub>L</sub> ≥2kΩ, V <sub>O</sub> =±10V | 88   | 106              | —        | dB               |
| Unity Gain Bandwidth                      | f <sub>T</sub>   |                                           | —    | 3                | —        | MHz              |
| Input Resistance                          | R <sub>IN</sub>  |                                           | —    | 10 <sup>12</sup> | —        | Ω                |
| Common Mode Rejection Ratio               | CMR              | R <sub>S</sub> ≤10kΩ                      | 70   | 76               | —        | dB               |
| Supply Voltage Rejection Ratio            | SVR              | R <sub>S</sub> ≤10kΩ                      | 70   | 76               | —        | dB               |
| Operating Current                         | I <sub>CC</sub>  |                                           | —    | 6                | 10(11.2) | mA               |
| Slew Rate                                 | SR               |                                           | —    | 13               | —        | V/μs             |
| Equivalent Input Noise Voltage            | V <sub>NI</sub>  | R <sub>S</sub> =100Ω, B.W.=10~10kHz       | —    | 4                | —        | μVrms            |

## MEMO

**[CAUTION]**

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