

NJM072B/082B, 072/082

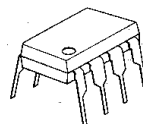
The NJM072B/082B & NJM072/082 are dual JFET input operational amplifiers. They feature low input bias and offset currents, high input impedance and fast slew rate. The low harmonic distortion and low noise make them ideally suit for amplifiers with high fidelity and audio amplifier applications.

The NJM072/082 may cause oscillation in some application like voltage follower.

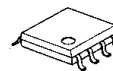
■ Absolute Maximum Ratings (Ta=25°C)

| | | |
|-----------------------------|--------------------------------|------------|
| Supply Voltage | V ⁺ /V ⁻ | ±18V |
| Input Voltage (note 1) | V _{IC} | ±15V |
| Differential Input Voltage | V _{ID} | ±30V |
| Power Dissipation | P _D (D,S Type) | 500mW |
| | (M,E Type) | 300mW |
| Operating Temperature Range | T _{opr} | -20~+75°C |
| Storage Temperature Range | T _{stg} | -40~+125°C |

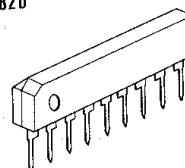
■ Package Outline



NJM072BD/082BD
NJM072D/082D



NJM072BM/082BM
NJM072M/082M
NJM072BE/082BE
NJM072E/082E



NJM072BS/NJM082BS
NJM072S/NJM082S

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

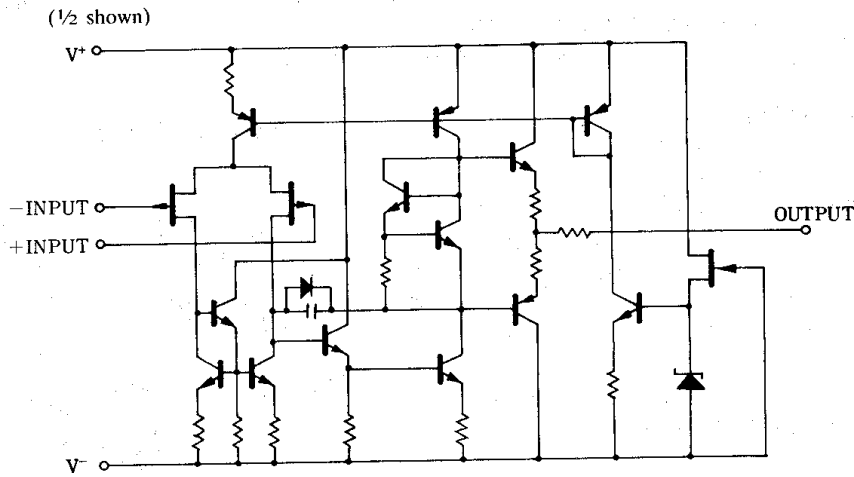
■ Electrical Characteristics (Ta=25°C, V⁺/V⁻=±15V)

() Applies to NJM082B, NJM082

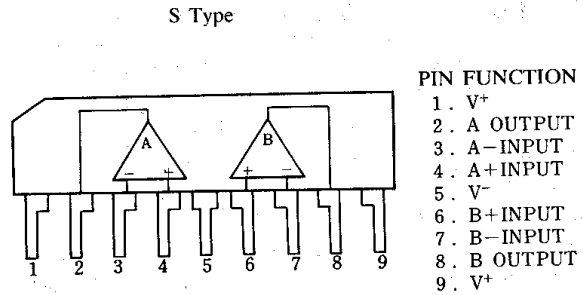
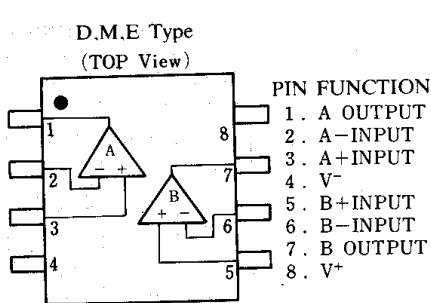
| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|------------------|--|------|------------------|----------|-------|
| Input Offset Voltage | V _{IO} | R _S =50Ω | — | 3(5) | 10(15) | mV |
| Input Offset Current | I _{IO} | | — | 5 | 50(200) | pA |
| Input Bias Current | I _B | | — | 30 | 200(400) | 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 |
| Large-Signal Voltage Gain | A _V | R _L ≥10kΩ, V _O =±10V | 3 | 6 | — | V/mV |
| Unity Gain Bandwidth | f _T | 072B/082B | — | 3 | — | MHz |
| | | 072/082 | — | 5 | — | 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 |
| Supply Current | I _{CC} | R _L =∞each amplifier | — | 3 | 5(5.6) | μA |
| Slew Rate | SR | 072B/082B | — | 13 | — | V/μs |
| | | 072/082 | — | 20 | — | V/μs |
| Equivalent Input Noise Voltage | V _{NI} | R _S =100Ω, B.W.=10~10kHz | — | 4 | — | μVrms |

NJM072B/082B, 072/082

■ Equivalent Circuit



■ Connection Diagram



■ Comparison between JFET-input Type Operational Amplifier and Bipolar Type

| Products | Input Bias MAX. (pA) | Slew Rate TYP. (V/ μ s) | Input Offset Voltage MAX. (mV) | Unity Gain Bandwidth TYP. (MHz) |
|-------------------|-------------------------|--------------------------------|-----------------------------------|------------------------------------|
| NJM072 (BIFET) | 200 | 13 | 10 | 3 |
| NJM082 (BIFET) | 400 | 13 | 15 | 3 |
| NJM4558 (BIPOLAR) | 500,000 | 1 | 6 | 2.5 |
| NJL2043 (BIPOLAR) | 1,000,000 | 6 | 3 | 14 |
| NJM2904 (BIPOLAR) | 250,000 | 0.4 | 7 | 0.8 |