

■ GENERAL DESCRIPTION

The NJM2147 is a dual high voltage and Low power operational amplifier IC.

The feature of high operating voltage is suitable for high supply voltage items, such as PBX, and others.

■ PACKAGE OUTLINE



NJM2147D

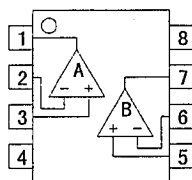


NJM2147M

■ FEATURES

- High Operating Voltage ($\pm 8V \sim \pm 28V$)
- High Slew Rate ($0.5V/\mu s$ typ.)
- Low Operating Current ($175\mu A$ typ.)
- Short-Circuit Protection
- Package Outline DIP8, DMP8
- Bipolar Technology

■ PIN CONFIGURATION



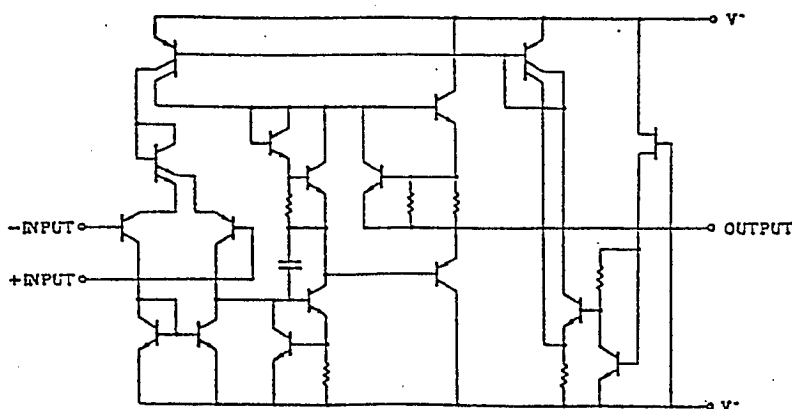
NJM2147D

NJM2147M

PIN FUNCTION

1. A OUTPUT
2. A -INPUT
3. A +INPUT
4. V^-
5. B +INPUT
6. B -INPUT
7. B OUTPUT
8. V^+

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

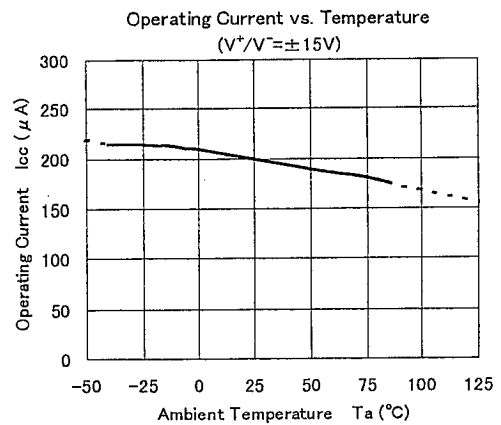
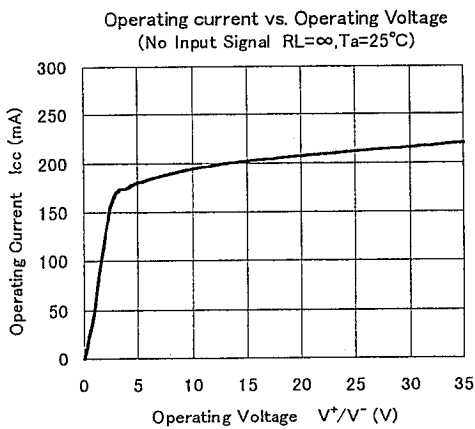
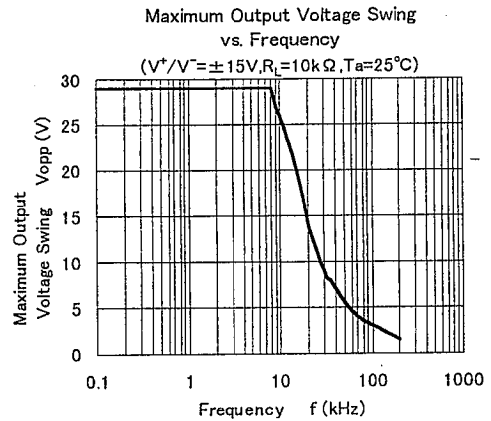
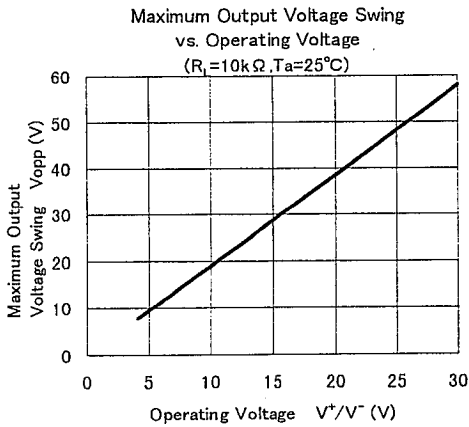
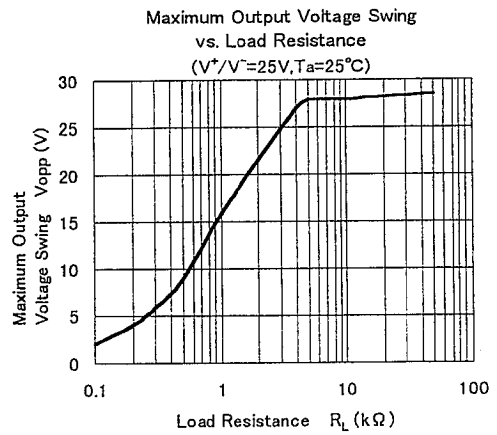
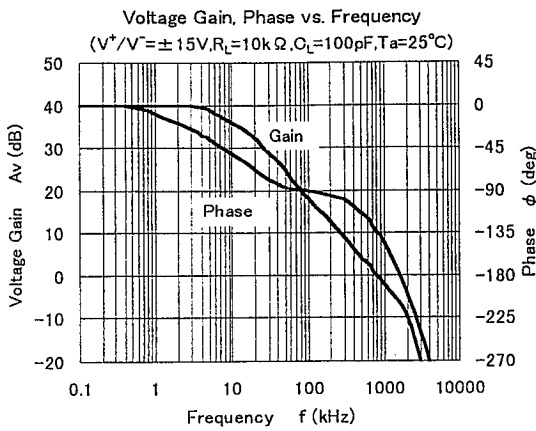
| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|--------------------------------|--------------------------|------|
| Supply Voltage | V ⁺ /V ⁻ | ±30 | V |
| Input Voltage | V _{IC} | ±28 (note) | V |
| Differential Input Voltage | V _{ID} | ±30 | V |
| Power Dissipation | P _D | (DIP8) 500 (DMP8) 300 | mW |
| Operating Temperature Range | T _{OPR} | -40 ~ +85 | °C |
| Storage Temperature Range | T _{STG} | -40 ~ +125 | °C |

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

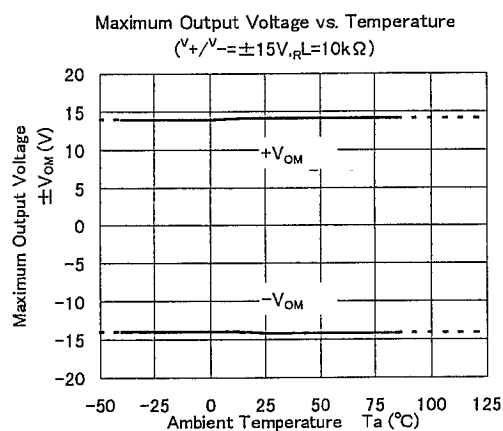
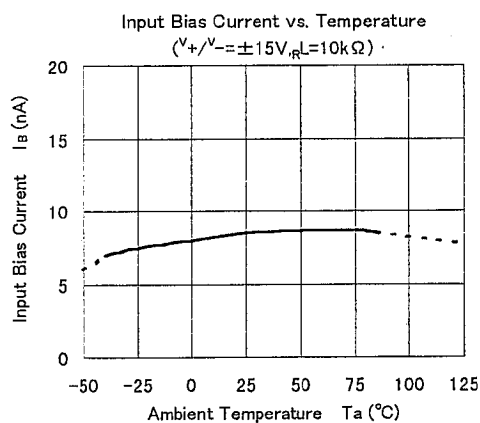
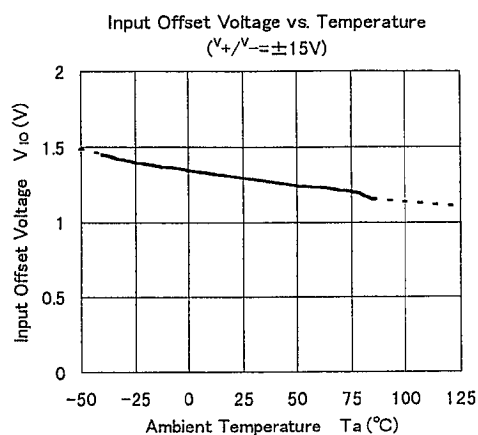
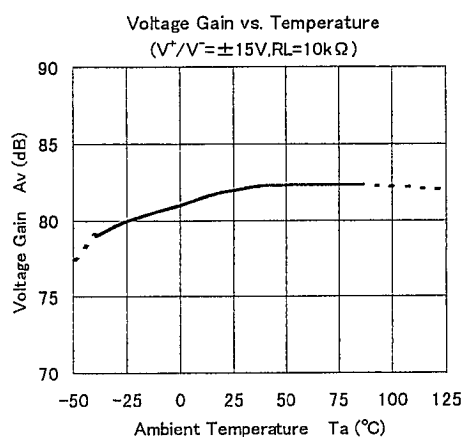
■ ELECTRICAL CHARACTERISTICS (V⁺/V⁻=±15V, Ta=25°C)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------|------------------|--|------|------|------|--------|
| Operating Voltage | V ⁺ | | ±8 | ±15 | ±28 | V |
| Input Offset Voltage | V _{IO} | R _S ≤ 10kΩ | — | 1.0 | 5.0 | mV |
| Input Bias Current | I _B | | — | 15 | 250 | nA |
| Input Offset Voltage | I _{IO} | | — | 1 | 80 | nA |
| Large Signal Voltage Gain | A _V | R _L ≥ 10kΩ, V _O =±10V | 60 | 88 | — | dB |
| Input Common Mode | V _{ICM} | | ±12 | ±13 | — | V |
| Voltage Range | | | | | | |
| Common Mode | CMR | R _S ≤ 10kΩ, V _{IC} =±12V | 60 | 90 | — | dB |
| Rejection Ratio | | | | | | |
| Supply Voltage | SVR | R _S ≤ 10kΩ, V ⁺ /V ⁻ =±14V~±28V | 74 | 110 | — | dB |
| Rejection Ratio | | | | | | |
| Maximum Peak-to-peak | V _{OM1} | R _L ≥ 10kΩ | ±10 | ±14 | — | V |
| Output Voltage Swing 1 | | | | | | |
| Maximum Peak-to-peak | V _{OM2} | R _L ≥ 50kΩ | ±13 | ±14 | — | V |
| Output Voltage Swing 2 | | | | | | |
| Operating Current | I _{CC} | R _L =∞ (All Circuit) | — | 175 | 300 | μA |
| Short-circuit | I _{OS} | | — | ±6 | — | mA |
| Output Current | | | | | | |
| Slew Rate | SR | R _L =10kΩ, C _L =100pF, V _{IN} =10V | — | 0.5 | — | V/μs |
| Response Time (Rise Time) | t _R | R _L =10kΩ, C _L =100pF, V _{IN} =20mV | — | 0.3 | — | μs |
| Equivalent Input | e _n | A _V =20dB, f=1kHz | — | 50 | — | nV/√Hz |
| Noise Voltage | | | | | | |

■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



MEMO

[CAUTION]

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