

ULTRA WIDE BAND, HIGH SLEW RATE DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2137 is an ultra wide band, high slew rate dual operational amplifier operated from low voltage ($\pm 1.35V$).

It can apply to active filter, high-speed analog and digital signal processor, line driver, HDTV, industrial measurement equipment and others.

It can also apply to portable communication items because of low operating voltage and low operating current.

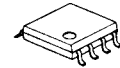
■ FEATURES

- Operating Voltage ($\pm 1.35V \sim \pm 6V$)
- Ultra Wide Band (200MHz typ.)
- High Slew Rate ($45V/\mu s$ typ.)
- Low Operating Current (1.14mA typ.)
- Bipolar Technology
- Package Outline SSOP8, DIP8, DMP8

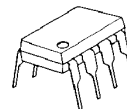
■ PACKAGE OUTLINE



NJM2137V

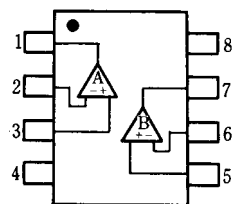


NJM2137M



NJM2137D

■ PIN CONFIGURATION

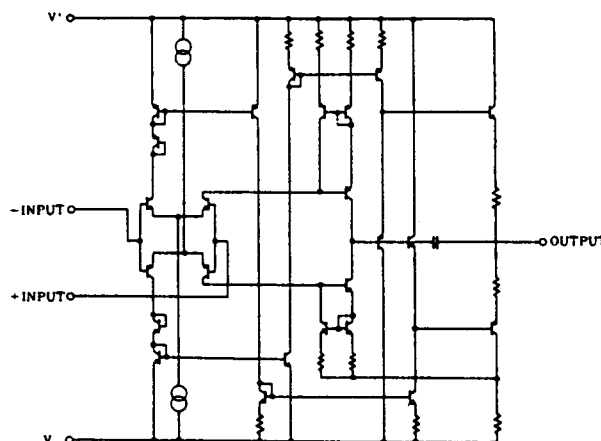


NJM2137D
NJM2137M
NJM2137V

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 (1/2 Shown)



NJM2137

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

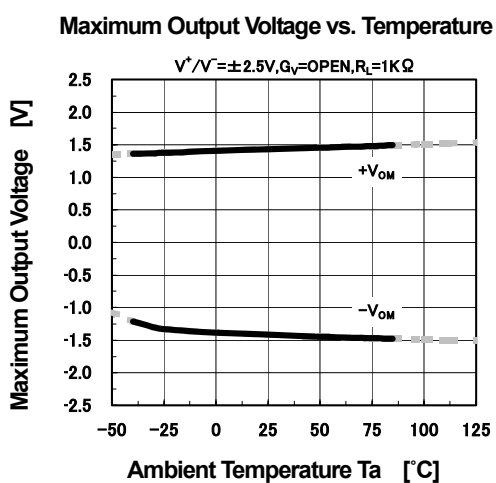
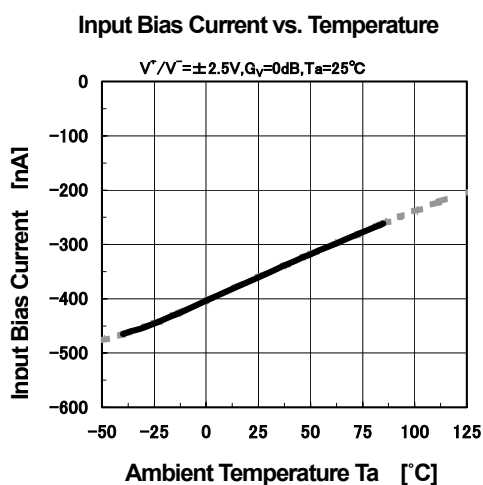
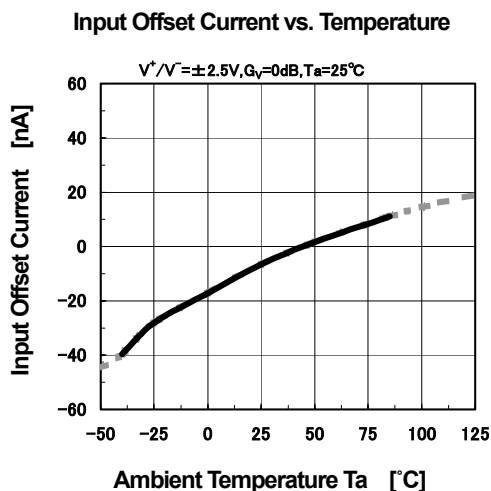
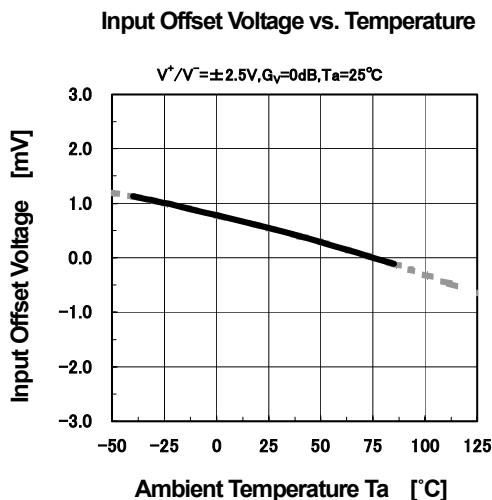
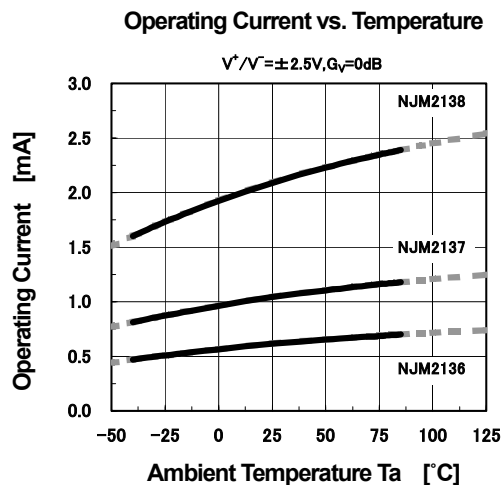
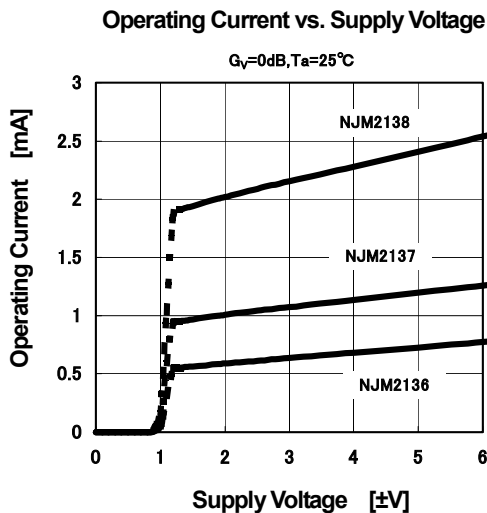
| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|-------------|---|------|
| Supply Voltage | V^+ / V^- | ± 6.75 | V |
| Differential Input Voltage | V_{ID} | ± 3 | V |
| Power Dissipation | P_D | (SSOP8) 250 (DMP8) 300 (DIP8) 500 | mW |
| Operating Temperature Range | T_{opr} | -40~+85 | °C |
| Storage Temperature Range | T_{stg} | -50~+125 | °C |

■ ELECTRICAL CHARACTERISTICS

($V^+ / V^- = \pm 2.5V, Ta = 25^\circ C$)

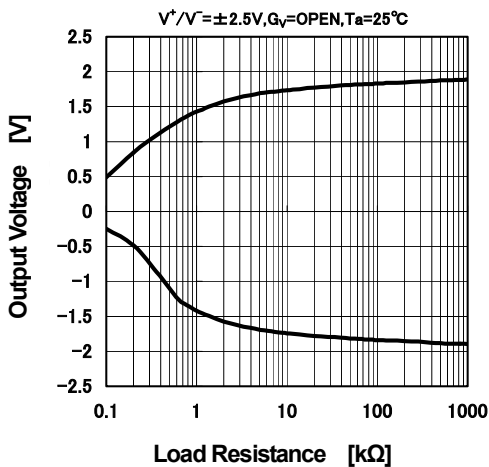
| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------------|--------------|-----------------------------|-------------|-------------|------------|------------|
| Operating Voltage | V^+ / V^- | | ± 1.35 | ± 2.50 | ± 6.00 | V |
| Input Offset Voltage | V_{IO} | $R_S = 0\Omega$ | - | 1.0 | 5.0 | mV |
| Input Bias Current | I_B | | - | 0.5 | 2.0 | μA |
| Input Offset Current | I_{IO} | | - | 20 | 200 | nA |
| Large Signal Voltage Gain | A_V | $R_L \geq 10k\Omega$ | 65 | 75 | - | dB |
| Input Common Mode Voltage Range | V_{ICM} | | 1.2 -1.2 | 1.5 -1.5 | - | V |
| Common Mode Rejection Ratio | CMR | $-1V \leq V_{cm} \leq +1V$ | 45 | 60 | - | dB |
| Supply Voltage Rejection Ratio | +SVR -SVR | | 50 70 | 60 80 | - | dB |
| Maximum Output Voltage Swing | V_{OM} | $R_L = 1k\Omega$ | 1.1 -0.9 | 1.4 -1.2 | - | V |
| Operating Current | I_{CC} | $R_L = \infty$ (all Amp.) | - | 1.14 | 1.5 | mA |
| Slew Rate | SR | $A_V = 0dB$ | - | 45 | - | V/ μs |
| Gain Bandwidth Product | GB | 60dB • 500kHz | 100 | 200 | - | MHz |
| Phase Margin | ϕ_M | 40dB | - | 25 | - | deg. |
| Unity Gain Bandwidth | f_T | 40dB | - | 40 | - | MHz |

■ TYPICAL CHARACTERISTICS

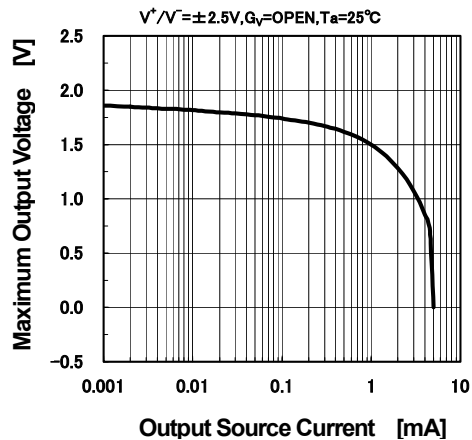


■ TYPICAL CHARACTERISTICS

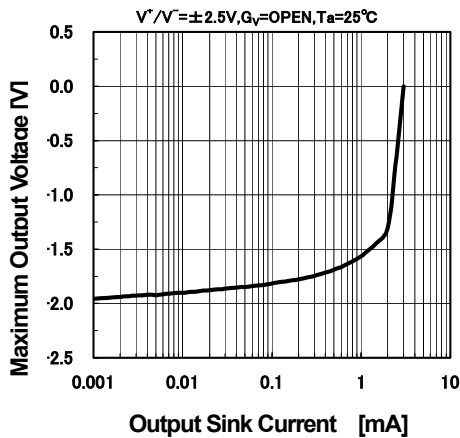
Output Voltage vs. Load Resistance



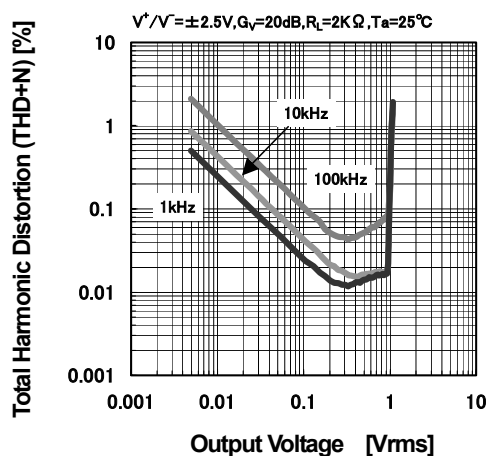
Maximum Output Voltage vs. Output Source Current



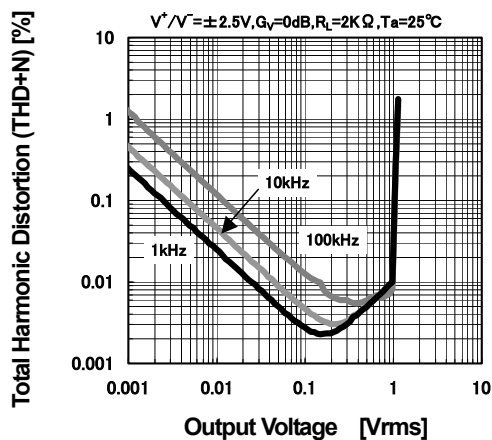
Maximum Output Voltage vs. Output Sink Current



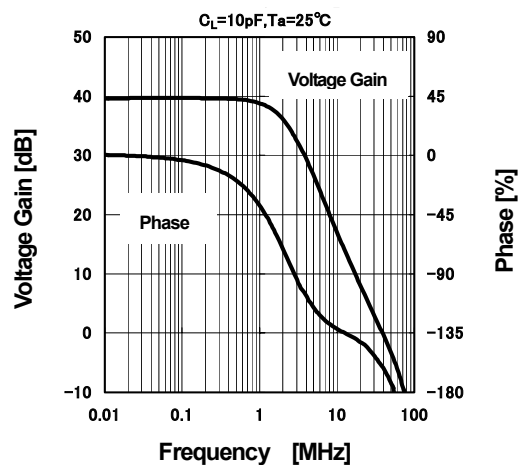
Total Harmonic Distortion vs. Output Voltage



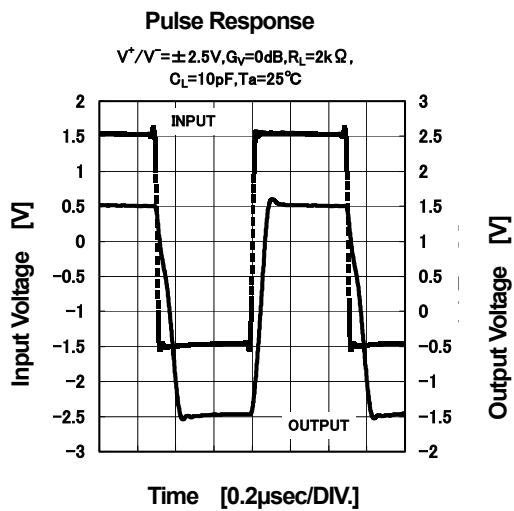
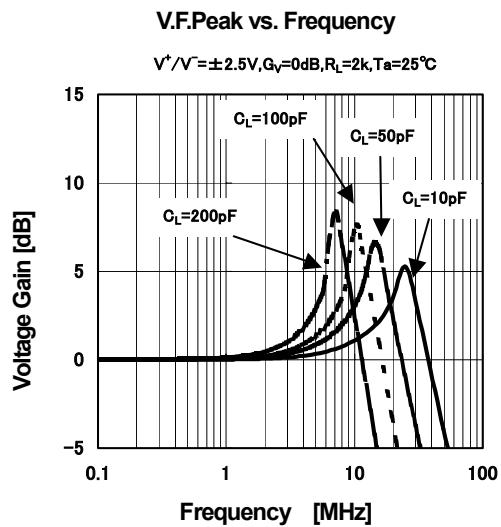
Total Harmonic Distortion vs. Output Voltage



Voltage Gain, Phase vs. Frequency



■ TYPICAL CHARACTERISTICS



[CAUTION]

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