

QUAD OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

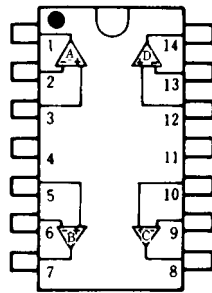
The NJM2058 integrated circuit is a quad high-gain operational amplifier internally compensated and constructed on a single silicon chip using an advanced epitaxial process.

Each amplifier of the NJM2058 has the same electrical characteristics of the NJM4558.

■ FEATURES

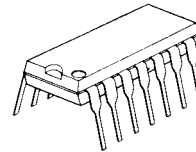
- Operating Voltage ($\pm 4V \sim \pm 18V$)
- Package Outline DIP14, DMP14, SSOP14
- Bipolar Technology

■ PIN CONFIGURATION

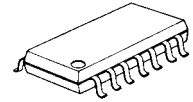


NJM2058D
NJM2058M
NJM2058V

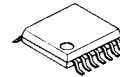
■ PACKAGE OUTLINE



NJM2058D



NJM2058M

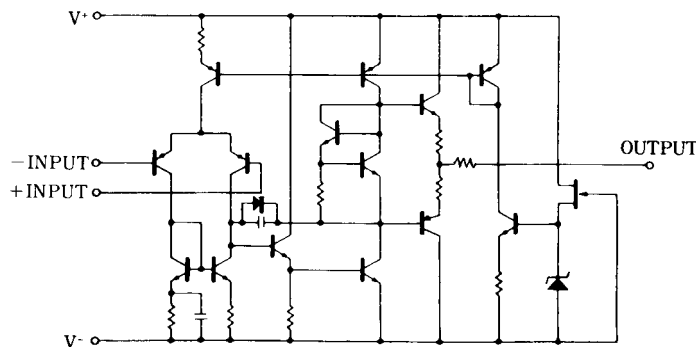


NJM2058V

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)



NJM2058

■ 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

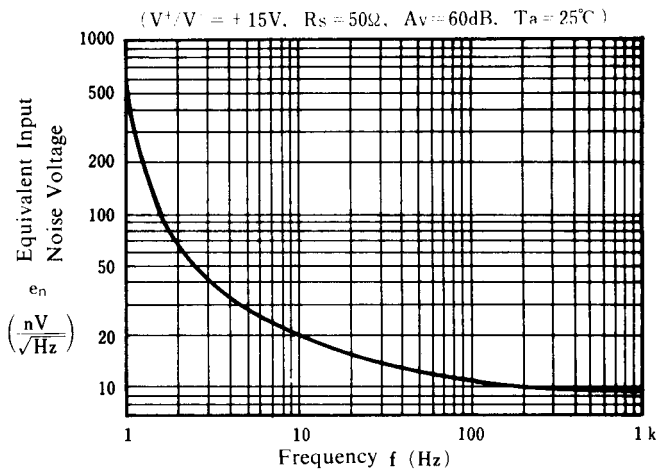
■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, $V^+ / V^- = \pm 15V$)

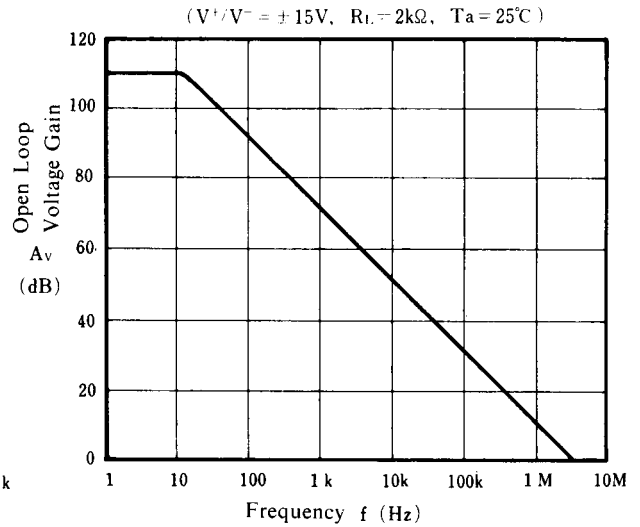
| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------------|-----------|-------------------------------------|------|------|------|-------|
| Input Offset Voltage | V_{IO} | $R_S \leq 10k\Omega$ | - | 0.5 | 6 | mV |
| Input Offset Current | I_{IO} | | - | 5 | 200 | nA |
| Input Bias Current | I_B | | - | 20 | 500 | nA |
| Input Resistance | R_{IN} | | 0.3 | 1 | - | MΩ |
| Large signal Voltage Gain | A_V | $R_L \geq 2k\Omega, V_O = \pm 10V$ | 86 | 100 | - | dB |
| Maximum Output Voltage Swing 1 | V_{OM1} | $R_L \geq 10k\Omega$ | ± 12 | ± 14 | - | V |
| Maximum Output Voltage Swing 2 | V_{OM2} | $R_L \geq 2k\Omega$ | ± 10 | ± 13 | - | V |
| Input Common Mode Voltage Range | V_{ICM} | | ± 12 | ± 14 | - | V |
| Common Mode Rejection Ratio | CMR | $R_S \leq 10k\Omega$ | 70 | 90 | - | dB |
| Supply Voltage Rejection Ratio | SVR | $R_S \leq 10k\Omega$ | 76.5 | 90 | - | dB |
| Operating Current | I_{CC} | | - | 7 | 11.3 | mA |
| Slew Rate | SR | | - | 1 | - | V/μs |
| Equivalent Input Noise Voltage | V_{NI} | RIAA, $R_S = 2.2k\Omega, 30kHz$ LPF | - | 1.4 | - | μVrms |

■ TYPICAL CHARACTERISTICS

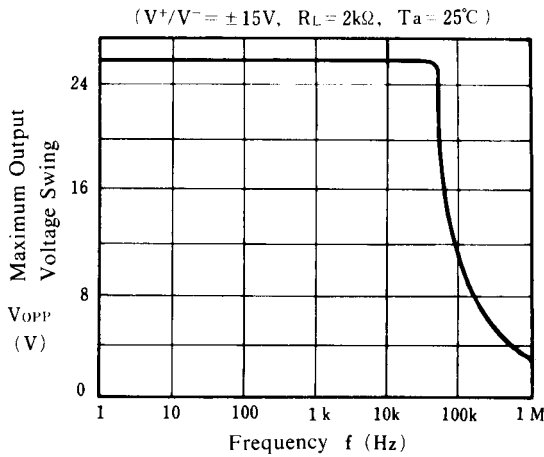
Equivalent Input Noise Voltage vs. Frequency



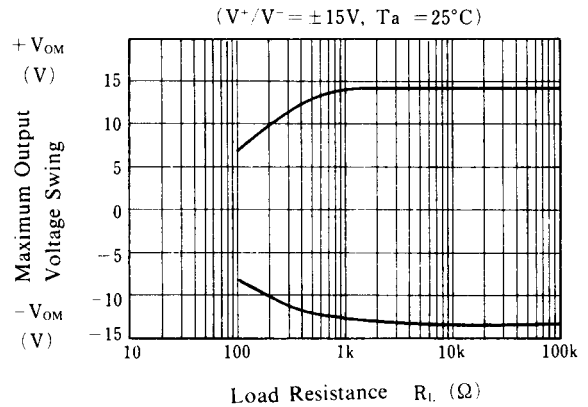
Open Loop Voltage Gain vs. Frequency



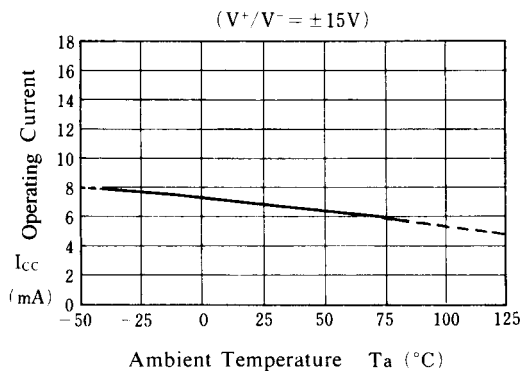
Maximum Output Voltage Swing vs. Frequency



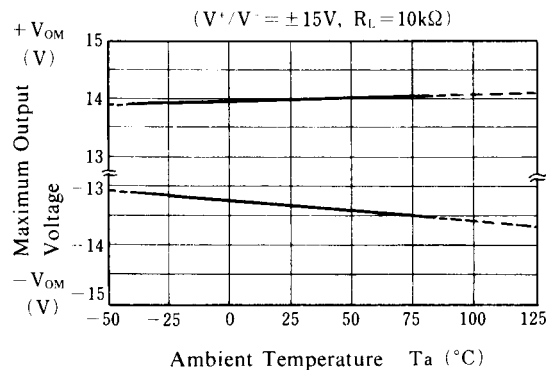
Maximum Output Voltage Swing vs. Load Resistance



Operating Current vs. Temperature



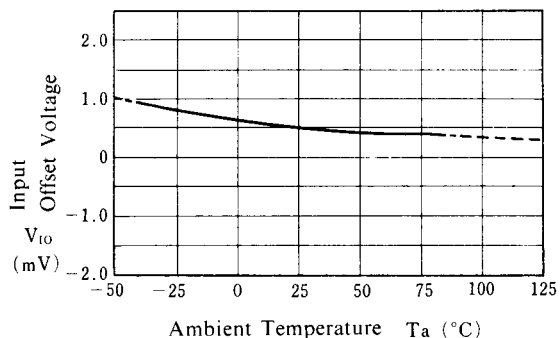
Maximum Output Voltage Swing vs. Temperature



■ TYPICAL CHARACTERISTICS

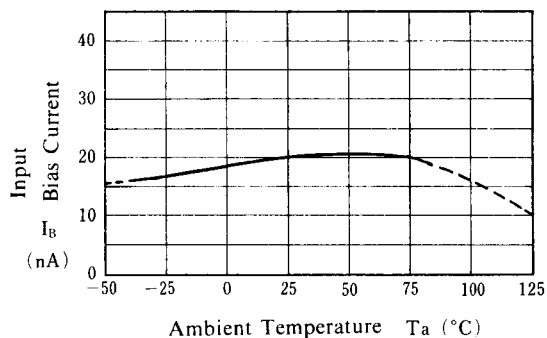
Input Offset Voltage vs. Temperature

($V^+/V^- = \pm 15V$)



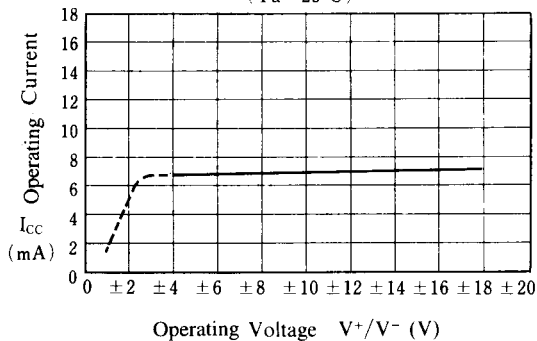
Input Bias Current vs. Temperature

($V^+/V^- = \pm 15V$)



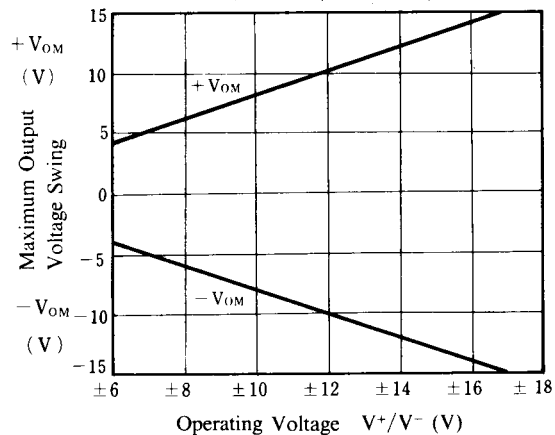
Operating Current vs. Operating Voltage

($T_a = 25^\circ C$)



Maximum Output Voltage Swing vs. Operating Voltage

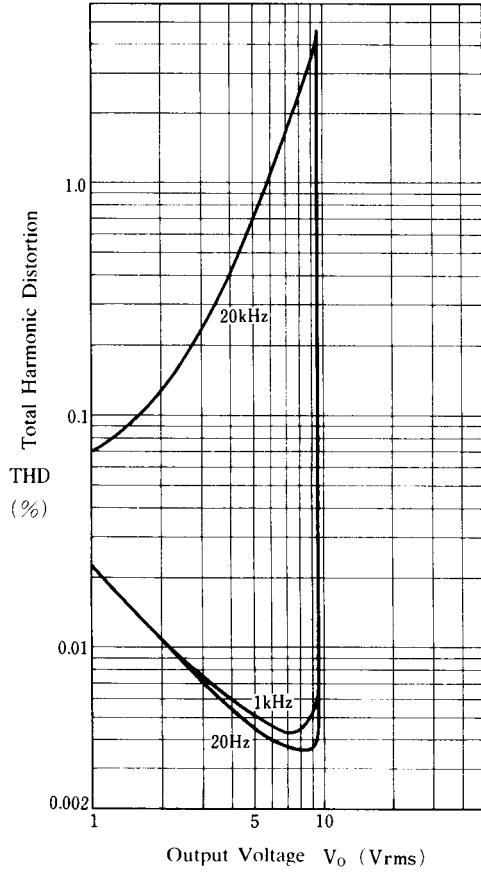
($R_L = 2k\Omega, T_a = 25^\circ C$)



■ TYPICAL CHARACTERISTICS

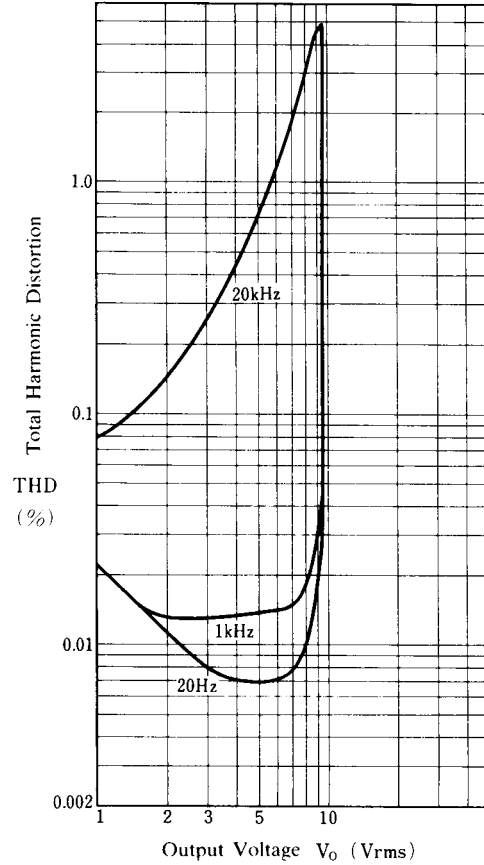
Total Harmonic Distortion

($V^+/V^- = \pm 15V$, Gain=40dB, $R_L = 10k\Omega$,
 $T_a = 25^\circ C$)



Total Harmonic Distortion

($V^+/V^- = \pm 15V$, Gain=40dB, $R_L = 2k\Omega$,
 $T_a = 25^\circ C$)



[CAUTION]

The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[NJR:](#)

[NJM2058M](#) [NJM2058D](#) [NJM2058V-TE2](#) [NJM2058V-TE1](#) [NJM2058M-TE1](#) [NJM2058M-TE2](#)